INTERIOR DEPARTMENT APPROPRIATIONS FOR 1954

HEARINGS

BEFORE THE

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

EIGHTY-THIRD CONGRESS

FIRST SESSION

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SUBCOMMITTEE ON INTERIOR DEPARTMENT

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PART 3

Bureau of Reclamation

Printed for the use of the Committee on Appropriations

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INTERIOR DEPARTMENT APPROPRIATIONS FOR 1954

WEDNESDAY, MARCH 25, 1953.

BUREAU OF RECLAMATION

WITNESSES

FRED G. AANDAHL, ASSISTANT SECRETARY OF THE INTERIOR FOR WATER AND POWER
GOODRICH W. LINEWEAVER, ASSISTANT COMMISSIONER
HARVEY F. McPHAIL, ASSISTANT COMMISSIONER
KENNETH W. MARKWELL, ASSISTANT COMMISSIONER
ALFRED R. GOLZE, DIRECTOR, DIVISION OF PROGRAMS AND FINANCE
E. D. EATON, DIRECTOR, DIVISION OF OPERATION AND MAINTENANCE
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GEORGE TOMLINSON, ASSISTANT DIRECTOR, DIVISION OF PROJECT PLANNING
DR. SHERMAN JOHNSON, BUREAU OF AGRICULTURAL ECONOMICS, DEPARTMENT OF AGRICULTURE
DR. FRANK PARKER, BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, DEPARTMENT OF AGRICULTURE
GEORGE CLYDE, SOIL CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

Mr. JENSEN. The committee will come to order.

We have before the committee this morning the Bureau of Reclamation. We are pleased to see our former colleague, former Governor of North Dakota, and former Congressman in the United States House of Representatives, Fred Aandahl, who was, during the 82d Congress, a member of the Appropriations Committee of the House.

I understand Mr. Aandahl is acting at the present time as Chief of the Bureau of Reclamation.

I see our old friend, Goodrich Lineweaver across the table, who has been with the Department for many years, and I presume it will be your responsibility, Mr. Lineweaver, to head the staff at this time and to answer the questions which this committee will put to you.

I note you have a number of your assistants here, and if you cannot answer the questions why, of course, we will expect you to get someone else to answer them who can answer properly. We hope you have all the answers.

Mr. LINEWEAVER. We will try, Mr. Chairman, as always.

Mr. JENSEN. Off the record.

(Discussion off the record.)

Mr. JENSEN.

We have decided to place in the record a sort of history of each project that is handled by the Bureau of Reclamation at the outset of the discussion on each project. That format is a bird's-eye view or picture of each project. It shows when the project was authorized, when the first appropriation was made, the estimated cost of the project at that time, the present estimated cost of the project, whether it is a multiple-purpose project, or simply an irrigation project and many other things which are necessary to get more or less a complete picture of each project.

Then we shall begin the questioning from that format and continue with that project until it is completed. Each member will take a project and ask the questions he wants to ask on it, whether it be for investigations, planning, construction, or operation and maintenance.

First I shall ask questions on everything pertaining to that project, as will each member of the committee, and when the hearings are completed on each project we will then have in the record that project all in a nutshell, so to speak, so that we will not have to turn from page to page or from one section of the hearing to another to find out what we would like to know about the project. It will be altogether in one section of the hearing. I hope we can follow that pretty religiously.

Now, Governor Aandahl would you like to make a statement at this time.

GENERAL STATEMENT

Mr. AANDAHL. Mr. Chairman, this is my first appearance before the committee as Assistant Secretary of Interior for Water and Power.

I appreciate the privilege of appearing here and visiting with my former friends and associates on the committee.

At this time I think it might be well if I would just make a few statements relative to my general perspective of the reclamation program.

We are all aware of the fact that one of our great national natural resources is water, and insofar as that water resource is not harnessed it runs either wastefully or idly to the sea. If we build dams and harness and utilize this water it does not, in any way, detract from this resource in the amount that will be available in succeeding years.

I feel that there is a large and important program ahead in the field of reclamation. We want to think of it in terms of a continuing program. We should build our organization, and should proceed with that program at about the speed and the tempo that the Congress, in measuring the financial resources of the country and in the balancing of the budget, sees fit to establish. It will be my purpose in the position of Secretarial Adviser and Director of the Bureau of Reclamation to see that its program keeps within the limitations of the appropriations and the authorizations that are made by the Congress. In reclamation work there are really two phases; one is a phase that is exploratory. It is of a research nature. We know the resources are there, the water resources are there, and we know the land is there. We do not know in just which locations the two can be put together to good advantage.

We have had a revealing experience in North Dakota during the past 5 or 6 years.

We have there pending a project—the Missouri-Souris diversion, which after extended study and research we have found that part of the area will not lend itself to consistent irrigation because of soil conditions, but we have also found, by further research, that there are adjoining areas of practically the same size that will lend themselves to irrigation to very good advantage. So in reclamation work you have this first phase, which is one of research and investigation and exploration.

Then there is another aspect of reclamation work. It is somewhat missionary, and it takes initiative in getting something started and in doing that there are expenditures which are made just like in missionary work where we cannot expect full repayment, dollar for dollar. So, in reclamation work, both because of the research, the exploration, the study that needs to be made, and because of the promotional feature and the missionary feature with respect to many of these new developments we find that part of the cost of reclamation is being taken care of by nonreimbursable appropriations or portions of appropriations that are not reimbursable, and also that power revenues are used to some extent to pay the cost of irrigation development.

I recognize fully that there are those aspects of reclamation work. On the other hand, when these things have been done we want projects developed that give a reasonable assurance that they are fully justified and will pay off, as far as the remainder of the investment is concerned, and it is in the light of that interpretation that I want to give all possible encouragement to the continuation of a sizable reclamation program in the United States.

POWER DEVELOPMENT

Now, in connection with irrigation, and inseparable from it, is power development.

When we build a multiple-purpose dam there are power benefits in that dam as well as irrigation and many other benefits, flood control, municipal water, recreation, wildlife, and perhaps numerous others, but the power development is important, and I feel that we should generate a maximum of hydroelectric power in these multiple-purpose dams. That is, the maximum that can be generated without taking away any of the water which will be needed for reclamation and that type of purpose, but we do not want to see any of that water going through the structure idly, without being put to beneficial use in generating hydroelectric power.

When that power is generated we have a marketing problem. That power should be marketed in such a way that it does not disturb the established units of retail sales. They may be REA, or they may be municipal plants, or they may be private enterprise, but the marketing of that hydroelectric power should be handled in such a way that it does not disturb the established retail agencies that we find in the communities. The transmission lines owned by the Government should be limited to those that are necessary to tie the large hydro plants together to get the maximum of firm power, and then occasional spurs out into the territory where it might be necessary to reach load centers, but insofar as there are presently existing lines that will serve that purpose, and insofar as there are distributing agencies in the com-

munity that are willing to build new lines for that purpose, we want to use those facilities and keep away from a federalized system of supplying electric energy.

There is a fully justified field for the Federal Government in the development of this hydroelectric power, but we certainly do not want to see a federalized system in what we are doing. Basically that is what we have in mind.

With that limited statement I am going to ask Mr. Lineweaver and the other witnesses to present the details for this appropriation.

Mr. JENSEN. May I say, Governor, that I certainly appreciate that fine, comprehensive, clear, and concise statement of your position on this very important matter of reclamation and all its phases, and I am sure the rest of the committee feels the same way about it.

Mr. FENTON. Let me say "amen" to that, Governor.

Mr. JENSEN. Now, Mr. Lineweaver, I presume that you have a statement that you would like to make at this time.

Mr. LINEWEAVER. Yes, sir; I have a factual statement, Mr. Chairman, which covers the various phases of the program. It is purely factual, and I will submit that for the record.

Mr. JENSEN. Without objection it may be included in the record. Proceed.

Mr. LINEWEAVER. That constitutes my preliminary statement.

Mr. FENTON. Mr. Chairman, I think he ought to read it into the record so that we know what is in it.

Mr. JENSEN. Yes; I think he should read it.

Mr. LINEWEAVER. The estimates of appropriation for the Bureau of Reclamation, for the fiscal year 1954 now before you, represent minimum financing of a going program. The 1954 program embodies the Bureau's efforts to complete work on those projects or project features which have been under construction for some years. However, a number still have some years to go. Work on projects or project features from which early benefits cannot be obtained has been postponed or scheduled at the minimum level which will prevent losses resulting from interruption of construction in progress.

We are glad to report that excellent progress is being made with the funds made available for fiscal year 1953. The new starts added to the reclamation program are, with one exception, actively under way. During the course of the hearings we will report in detail, project by project, the status of the work. This statement is limited to a general summary of the 1954 estimates as related to the overall programs of the Bureau.

The 1954 program will not begin to meet existing needs—much less those that will result from an emergency-defense program—for power, for municipal and industrial water, and for irrigation.

The Bureau is requesting funds to establish an adequate investigations program for the purpose of obtaining data needed for projects which will help fill the gap between present water and power supplies and current and anticipated needs therefor.

I might interpolate there to say that this is a factor to which Governor Aandahl referred in his opening statement, in connection with investigations.

Funds for operation and maintenance of the projects already completed and a soil- and moisture-conservation program are included, together with amounts required for the supervisory and administrative

functions within the Bureau. An appropriation request is also included to restore the emergency fund to a point adequate to meet probable emergencies in fiscal year 1954.

I am referring now, Mr. Chairman, to the January budget.

GENERAL INVESTIGATIONS

The Bureau is requesting $6,250,000 to continue an adequate program of investigations with the conviction that this amount is necesssary in order to accomplish such investigations and advance planning work as is vital to the fulfillment of the ever increasing water and power demands of the Western States. They are multiple-purpose projects.

Mr. JENSEN. Your statement refers to the original budget?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. I think it should be understood that you cannot at this time talk on the revised budget because of the fact that the revised budget has not yet reached this committee.

Mr. LINEWEAVER. That is right, sir.

Mr. JENSEN. I think that should be explained.

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. Go ahead.

Mr. LINEWEAVER. Therefore, this statement is directed toward the budget that was submitted to the Congress in January. As you say, Mr. Chairman, no further submissions have been made by the Bureau of the Budget and we are not privileged to discuss any other revisions unless the committee should have us discuss revisions that have been recommended by Secretary McKay.

The status of investigations of all types, excluding a number of investigations for which gaging only is in progress, are:

Status	Number of investigations in program		
	1952 actual	1953 estimate	1954 estimate
Completed	45	48	36
Continued	104	69	43
Initiated or resumed	8	10	15

The enormous gap between the supply of available projects and the demand therefor requires that the time-consuming work of investigating and planning new projects be carried forward at an accelerated pace. Postponement of this program will result in minor savings at this time, but only at the cost of years lost later. The general situation with respect to water and power shortages makes it desirable that an orderly flow of recommendations for authorization of new projects be made without delay. It is in the public interest that these vital resource developments be carefully investigated and wisely planned in advance of construction. The need for new development of water and power supplies is so great that in some cases projects may be authorized and placed under construction whether adequate investigations have been made or not.

I interpolate there, Mr. Chairman, to say that our experience has been that that has happened, and we have felt that in many cases adequate investigations have not been made when the initial appropria-

tions were made, and because of the demand we were directed to go ahead with the construction with the best information available.

When new projects are undertaken withot adequate investigations, losses always result from false starts and inadequate plans.

The justification presented for the "General investigations" appropriation discusses the programed activities in detail, including purposes, locations, and costs of the individual investigations.

CONSTRUCTION AND REHABILITATION

Construction: Authorized construction projects scheduled for accomplishment reflect the following program:

Fiscal year:	*Construction program*
1953	$226,022,770
1954	204,740,277
1955	289,326,254
1956	365,982,088
1957	361,062,113
1958	318,288,373
1959	234,877,145

Mr. FENTON. Will you total that up?

Mr. LINEWEAVER. Yes, sir, the total is $2,000,299,020.

Mr. FENTON. Go ahead.

Mr. LINEWEAVER. This schedule does not conform precisely with the data shown on page 20 of the pamphlet "The Reclamation Program 1953–59." The published program presents the status of the program as of June 30, 1952. The 1954 budget schedules, here and elsewhere, include changes made since June 30, 1952.

As the committee is no doubt aware, this is a moving roposition from day to day or from week to week, or month to month, and there are constant revisions and modifications.

While the defense effort continues to rquire modifications in this master program with reference to needs for power and water supplies and to funds available, it is believed that the general pattern will hold fairly stable. As work now under way is brought to completion the construction program will drop appreciably each year after fiscal year 1957 unless additional projects are authorized, and funds provided for their construction.

Irrigation and power construction: Irrigation by acres and power by kilowatts to be developed by the master program described above will become available over the several fiscal years as shown below:

Fiscal year	Additional acreage irrigable from new facilities	Kilowatt generating capacity to be installed	Fiscal year	Additional acreage irrigable from new facilities	Kilowatt generating capacity to be installed
1953	246,500	352,500	1957	317,800	531,400
1954	279,400	207,500	1958	1,042,400	53,500
1955	431,600	226,500	1959	350,600	254,400
1956	299,400	39,000			

The grand total by 1959 would be 2,967,700 gross acres and 1,664,800 kilowatts in addition to current irrigated acreage and power installations.

It is quite important for the committee to recognize the dominance of the 7 major projects in the picture which I have just outlined. As in prior years, the Bureau's program is not well-rounded. In other words, the major construction is in certain areas which you will notice from the figures that I give below. The 7 projects which I list below require $169,429,387, or 83 percent of the 1954 construction program. These are:

Eklutna project, Alaska	$12,791,000
Central Valley project, California	31,021,387
Colorado-Big Thompson project, Colorado	5,750,000
Palisades project, Idaho	17,650,000
Weber Basin project, Utah	6,776,000
Columbia Basin project, Washington	21,930,000
Missouri River Basin project, Montana, North and South Dakota, Wyoming, Nebraska, and Kansas	73,511,000
Total	169,429,387

While the water resources and topography of the various States have a major effect on the planning of projects, the Bureau believes that a more geographically balanced program is both possible and necessary. Again, investigations funds are required for the surveys needed before a more widely spread program can be planned.

Dominance of continuing construction work.—Approximately 99.1 percent of the 1954 construction program is for continuance of work under way on 31 regular projects, and 15 units or divisions of the Missouri River Basin project, plus necessary drainage and minor completion activities on 10 projects and 4 Missouri River Basin units which are functionally complete but which require a relatively minor amount of "cleanup" work. The fiscal year 1954 program will add 207,500 kilowatts of generating capacity and will provide full water supply to 128,700 acres and suplemental water to 150,700 acres.

You recall, Mr. Chairman, last year we were instructed to combine this minor work into one item to cover the "cleanup" work, instead of having 8 or 10 individual project items as set up in the justifications.

New starts.—Funds are requested to initiate construction during fiscal year 1954 on Minidoka project, Idaho, American Falls Power Division, and 2 new features of 2 projects under construction, namely, the Deer Creek power plant of the Provo River project, Utah, and the Roza power plant of the Yakima project, Roza Division, Washington.

Rehabilitation and betterment of existing projects.—Postwar surveys of all existing projects showed that large expenditures would be necessary to rehabilitate certain of those projects. Such work, if included in annual operation and maintenance assessments, would result in charges which the water users could not meet. Since the Bureau of Reclamation has a fundamental and abiding responsibility for the maintenance of irrigation works on all projects for which full repayment has not been made, funds are requested for the financing of major repair and replacements needed to protect the Federal investment. Such expenditures will be reimbursed by the water users repayment contracts which permit the spreading of charges over more than 1 year.

I may interpolate, Mr. Chairman, for the information of the new members of the committee, that the rehabilitation and betterment program was authorized by legislation several years ago.

Rehabilitation work scheduled for fiscal year 1954 requires $2,500,000 additional funds for continuing work on nine projects and start of work on one project. Three of these projects will be completed during the year.

OPERATION AND MAINTENANCE

The appropriation estimate of $24,800,000 for fiscal year 1954, together with $2,235,183 advanced by water users will finance entirely or in part the operation of 36-six projects or divisions of projects, many of which are multiple purpose in scope, and 10 units of the Missouri River Basin project, and in addition, the soil-and-moisture-conservation program, work on the Colorado River front work and levee system, the municipality of Boulder City, Nev., and a cooperative program with the Department of Agriculture for farmers on reclamation projects.

That is a new item in the Interior appropriation bill, Mr. Chairman, which came about by reason of the House Appropriations Subcommittee on Agriculture, and which was confirmed by the conference report on the agricultural appropriation bill for 1953.

An increase in the estimate over fiscal year 1953 is necessary due principally to completion of additional project facilities on such major projects as Columbia Basin and Colorado-Big Thompson and to the resulting increases in acreage served. During fiscal year 1954 the Bureau will be able to supply 279,400 acres with water for the first time.

The fiscal year 1954 estimate also reflects an increase in generating capacity of 207,500 kilowatts, and the addition of more miles of transmission lines and more substations. This increase reflects a substantial raise in the funds required for wheeling costs. We have been working out wheeling arrangements with the private utilities in several States and that program is working very satisfactorily, but it does require additional money to compensate the private utilities for the wheeling charges. In addition, the project power facilities require continued replacement and improvements to maintain operating standards commensurate with the importance of reliable electric power supply. This is highly important, particularly in areas where the Bureau contributes heavily to the power supply.

Soil and moisture conservation offers the best long-term solution to the vital problem of sedimentation in the operating facilities as well as prevention of erosion on reclamation withdrawn lands. The amount estimated for this activity in fiscal year 1954, is $920,000 (nonreimbursable funds).

The request of $1,425,000 (nonreimbursable funds) for the Colorado River front work and levee system is needed to finance necessary dredging of the river channel to control the river flow, the maintenance of river control installations, the recording of river behavior and related activities. Aggradation resulting in raising of water levels and consequent damage has created many problems affecting agricultural lands, communities, and transportation facilities which this activity seeks to alleviate. The construction of permanent installations, such as levees, is provided under the appropriation for "Construction and rehabilitation," for which $1,905,000 is requested for fiscal year 1954.

For fiscal year 1954 as in fiscal year 1953 a separate estimate is included for operation of Boulder City, Nev. Prior to fiscal year 1953 funds required for the operation of Boulder City were included in the Boulder Canyon project operation and maintenance estimate. The amount estimated for this activity is $525,000, exclusive of $113,800 of cost of water and electricity borne by the Boulder Canyon project and transferred as a cost to Boulder City. This procedure, inaugurated under authority and by the direction of Secretarial Order No. 2650, dated July 27, 1951, is a forerunner toward the ultimate objective of establishing Boulder City as a self-governing and self-supporting municipality under the laws of the State of Nevada.

A request of $800,000 (nonreimbursable funds) is included to inaugurate a program of agricultural services to farmers in reclamation areas to be performed by the Department of Agriculture under plans cooperatively developed with the Department of the Interior.

GENERAL ADMINISTRATIVE EXPENSES

The appropriation estimate of $5,250,000 for fiscal year 1954 is the same amount as was appropriated for this item in fiscal year 1953. The amount requested is the bare minimium with which the Bureau can hope to discharge its administrative responsibilities without placing a heavier burden on reimbursable project funds. Because of the necessity of absorbing automatic pay increases and the higher costs of materials, supplies, and transportation, it actually represents a small reduction below the amount appropriated for fiscal year 1953.

EMERGENCY FUND, RECLAMATION PROJECTS

The establishment of an emergency fund to meet contingencies on irrigation and power facilities was authorized by the act of June 26, 1948. The availability of such a source of funds for emergency repairs to damaged facilities and for other emergencies has proven very beneficial.

The Bureau is requesting $1 million to restore this fund to a point adequate to meet probable emergencies in fiscal year 1954. The increase in physical plant through completion of extensive project facilities in recent years has added to the potential need for this fund.

PROPOSED CHANGES IN LANGUAGE FOR FISCAL YEAR 1954

The changes in appropriation language proposed for fiscal year 1954 are:

General investigations.—Proposed new language has been inserted which provides that not more than $100,000 shall be available for investigations in the Arkansas, White, and Red River Basins in connection with surveys in the States of Missouri, Arkansas, and Louisiana which have been in progress for the past several years.

Construction and rehabilitation.—Proposed new language has been inserted which will require the Bureau of Reclamation to utilize the reclamation fund and its receipts during the year to its fullest extent leaving no unappropriated balance at the end of the year.

Deletion of the proviso pertaining to Southwest Contra Costa County Water District system. The report called for in this pro-

vision is scheduled to be completed before the conclusion of the fiscal year 1954 appropriation hearings.

Deletion of the proviso prohibiting initiation of construction of transmission facilities within areas covered by wheeling contracts because it is an unnecessary appendage to the bill. The transmission line construction program is fully controlled by the appropriation processes making such language superfluous.

Deletion of the two provisos pertaining to Glendo unit and Moorhead Dam and Reservoir because construction will not be initiated until definite plan reports have been reviewed by the States concerned and approved by the Congress.

Deletion of the proviso authorizing completion of Coachella division of the All-American Canal system and the proviso authorizing emergency rehabilitation of Savage Rapids Dam as they are permanent legislation and need not be repeated in the annual appropriation act after fiscal year 1953.

Proposed new language has been inserted which limits the availability of funds for construction of the Eklutna project, Alaska, to amounts now or hereafter authorized ot be appropriated therefor.

Operation and maintenance.—Proposed new language has been inserted which will authorize the Bureau of Reclamation to transfer to the Department of Agriculture not to exceed $800,000 to finance certain services to be performed by that Department for farmers on reclamation projects.

General administrative expenses.—The language pertaining to the limitation under this appropriation item of not to exceed $150,000 to be used for salaries and expenses in connection with information work has been increased to $200,000 to facilitate adequate discharge of the public-information function and to achieve economy of administration.

Administrative provisions.—The language with respect to the purchase of passenger-carrying vehicles has been revised to permit the Bureau to purchase in fiscal year 1954 a maximum of 250 vehicles for replacement only, which is the minimum required to efficiently carry on authorized work. The average age of Bureau-operated vehicles is rapidly deteriorating below the level of efficient operation.

Proposed new language has been added to permit the Bureau to purchase an aircraft (Super Piper Cub) to be used for powerline patrolwork.

The language with respect to the limitation of not to exceed $50,000 for the hiring of consultants has been increased to $100,000, which will permit the Bureau to contract services of engineering firms as well as individuals for the design of certain specialized jobs. In addition, the phrase "* * * including such services * * *" has been deleted to simplify and clarify the language. Also the phrase "* * * when authorized by the Secretary" has been deleted to remove an administrative burden from the Secretary upon a proper delegation of authority by him.

Language has been deleted which permitted the Bureau to acquire excess aircrafts parts, equipment, and supplies from other agencies of the United States without reimbursement. The Bureau understands that such excess aircraft parts, equipment, and supplies may be acquired through General Services Administration without reimbursement.

The language pertaining to the limitation on force account has been revised to provide a limitation of 12 percent of the "Construction and rehabilitation" appropriation instead of 12 percent of the construction allotment to any one project, which will permit the Bureau to administer the program efficiently at less cost.

NATIONWIDE RESULTS FROM RECLAMATION

In response to your request, Mr. Chairman, I will summarize factual data as to nationwide results from this reclamation program:

The overall request for appropriations is made in order to maintain a continuing program of operation and maintenance, construction, and investigations for future development. This program is reviewed in the light of contributions to the Nation's economy by reclamation during the last half century.

Among the specific reclamation accomplishments are nearly 7 million acres of fertile farmland "under the ditch" and receiving either a full or supplemental supply of irrigation water through Bureau-constructed works. These acres make up over 125,000 family-sized farms and a like number of part-time farms and suburban units.

As an integral part of the multiple-purpose construction, 25 hydroelectric-power plants with an installed capacity of 4,266,200 kilowatts are on the line. During fiscal year 1952 these plants grossed $45.2 million from 25.3 billion kilowatt-hours of hydroelectric energy marketed. In terms of cumulative power revenues, nearly $322 million has been paid into the Treasury of the United States as a result of Bureau of Reclamation power operations. Another aspect of multiple-purpose development is in municipal and industrial water supply. Reclamation projects now provide water for over 2 million municipal and industrial water users.

As of June 30, 1952, nearly $445 million in direct project revenues has been paid into the Treasury of the United States in the form of water-service or construction-account payments by water users and from revenues from the sale of low-cost hydroelectric power. Additional Federal revenues accrued to the Government in the form of tax receipts. Cumulative estimates of Federal revenues attributable to reclamation project areas are now estimated at approximately $3 billion, a sum considerably greater than the total of all reclamation expenditures.

Last year a crop valued at $850 million was harvested on reclamation-watered lands to record the second consecutive year of crop values in excess of three-fourths of a billion dollars and the seventh straight year of values exceeding the half-billion-dollar mark. The cumulative value of crops grown on reclamation projects since the first recorded harvest of 1906 now stands at well over $8.8 billion, a sum 4 times larger than the cost of plant, property, and equipment on all projects both complete and incomplete.

Reclamation's production may be described only vaguely in monetary terms. A better clue can be gained through analysis of the crops grown. Four projects alone produce around 97 percent of United States-grown dates; 45 percent of winter and 42 percent of spring lettuce; 85 percent of the spring carrots; 85 percent of the spring and 80 percent of the early summer cantaloupes; and a sizable portion of

other of the Nation's choice protective foods. Reclamation projects supplied over 10 million tons of feed and forage needed to help balance out and make usable the 700 million-acre western range in the production of essential livestock and livestock products.

Productive irrigated acres on prosperous farms and the towns, villages, and cities they support create a thriving market in the West for non-Western products. This is evident in over 1,544,000 railroad cars loaded with nearly 60 million tons of eastern products and consigned to western markets in 1951. Of these cars, 29,200 came from the New England States, 162,000 from the Middle Atlantic, 608,000 from the East North Central, 99,200 from the East South Central, 84,000 from the South Atlantic, and 561,600 from Louisiana, Arkansas, Missouri, Iowa, and Minnesota.

Retail sales in the West added to nearly $40 billion in 1951, or over 3 times the size of the United States export market. The 17 Western States with only 22.8 percent of the Nation's population accounted for 25.3 percent of the national retail market. Retail sales in the 31 Eastern States stood at $989 per person, while the 17 Western States market averaged at $1,139 per person.

This retail market was nearly three times greater than total United States exports for the same year and provided an outlet for the textiles of East and South, the technical equipment and machinery of the Middle Atlantic and New England States, the automotive equipment, farm machinery, and industrial machinery of the Great Lakes States, the tobacco and tobacco products of the Southeast, and for the assorted goods and services offered to the retail trade by the innumerable suppliers of the Nation's markets. Much of the western market has been made possible by the establishment of prosperous communities on irrigated land.

A factor in the reclamation program is that 6,000 more persons each day surround the Nation's dinner table and the population surge forecast is 190 million by 1975. This increase means that the equivalent of 100 million additional acres of productivity equal to those now being tilled must be made available to maintain national standards and fulfill international commitments. The demand for reclamation farms is demonstrated by the results of a recent land opening on the Columbia Basin project in Washington State. On March 27, 11 farm units were advertised for sale to qualified veterans from land purchased and subdivided into family-sized farms. The sale took place at the Pioneer Elementary School in Quincy, Wash., and news of the availability of 11 farms brought 3,398 applicants.

Mr. JENSEN. That completes your statement, Mr. Lineweaver?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. Thank you.

BUDGET REVISIONS

Turning to page 2 of the justifications, will you insert it for the record? It shows in summary form the 1954 estimate of appropriations and sources of funds.

(The matter referred to follows:)

Summary of 1954 estimates of appropriations and sources of funds

Annual appropriation title	Estimate of appropriation	General fund	Reclamation fund	Colorado River dam fund	Colorado River development fund
General investigations	$6,250,000	$430,000	$5,320,000		$500,000
Construction and rehabilitation	193,888,000	65,448,497	[1] 128,439,503		
Operation and maintenance	24,800,000	3,205,000	19,415,290	$2,179,710	
General administrative expenses	5,250,000		5,250,000		
Emergency fund	1,000,000		1,000,000		
Total	231,188,000	69,083,497	[1] 159,424,793	2,179,710	500,000

[1] Subject to availability of receipts.

GENERAL INVESTIGATIONS

Mr. JENSEN. I believe there is a revised figure in the General Investigations item, is there not, Mr. Lineweaver?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. What is that revised figure?

Mr. LINEWEAVER. The budget estimate is $6,250,000, and the revised estimate, approved by Secretary McKay and forwarded to the Bureau of the Budget, makes the total $4,934,000, or a reduction of $1,316,000.

That reduction is largely in the advance-planning items, which, in many cases, are distributed to the construction items under the head of General Planning.

CONSTRUCTION AND REHABILITATION

Mr. JENSEN. Going to the next item, "Construction and rehabilitation." There is a revision there, is there not?

Mr. LINEWEAVER. Yes, sir. The total budget estimate is $193,888,000, and the revised estimate, under the recommendation of Secretary McKay, is $190,117,000, or a reduction of $3,771,000, which is represented by the following items: Colorado River front work and levee system, which in the budget estimate was $1,905,000, and the revised estimate is $150,000.

Mr. JENSEN. I think, possibly, we might just as well have that for the record, as we will discuss it more as we come to each project.

(The matter referred to follows:)

Analysis of revisions in fiscal year 1954 budget estimate

Appropriation item	Fiscal year 1954		
	Budget estimate	Revised estimate	Reduction
General investigation, total	$6,250,000	$4,934,000	$1,316,000
Itemization of reduction:			
Advance planning:			
Canadian River project	350,000	250,000	100,000
Central Valley project, Sacramento canals	631,000	0	631,000
Collbran project	400,000	250,000	150,000
Middle Rio Grande project	444,000	284,000	160,000
San Luis Valley project	275,000	0	275,000
Total items affected by reduction, advance planning	2,100,000	784,000	1,316,000
Construction and rehabilitation, total	193,888,000	190,117,000	3,771,000
Itemization of reduction:			
Colorado River front work and levee system	1,905,000	150,000	1,755,000
Central Valley project, Camp Stoneman substation	60,000	0	60,000
Colorado-Big Thompson project, Flatiron-Valmont line	388,000	0	388,000
Minidoka project, American Falls Power Division	853,000	0	853,000
Missouri River Basin project, transmission division, Yellowtail-Billings line and substation	715,000	0	715,000
Total items affected by reduction	3,921,000	150,000	3,771,000
Operation and maintenance, total	24,800,000	24,800,000	0
General administrative expenses, total	5,250,000	5,250,000	0
Emergency fund, total	1,000,000	1,000,000	0
Total appropriation [1]	231,188,000	226,101,000	5,087,000

[1] Total permanent appropriations excluded above: Budget estimate, $3,733,000; revised estimate $3,733,000.

Mr. LINEWEAVER. The revised estimate for the Colorado River front work and levee system is $150,000, or a reduction of $1,755,000. That reduction, Mr. Chairman, was recommended by reason of the difficulties experienced in securing the right-of-way for certain levees in the Yuma area, and it is within the discretion of the Secretary of the Interior to require the property owners or beneficiaries to provide the right-of-way. The recommendation to the Secretary was that we did not feel that the Government should buy the rights-of-way for these levees at this time.

The other reduction is in the Camp Stoneman substation of the Central Valley project; $60,000 was the budget estimate, and that is eliminated entirely.

In the Colorado-Big Thompson project, the Flatiron-Valmont line was $388,000 and that item was eliminated entirely.

The Minidoka project, American Falls power division, the estimate was $853,000 and that item wase eliminated entirely.

On the Missouri River Basin project, transmission division, Yellowtail-Billings line and substation, it was estimated at $715,000 and it has been eliminated entirely.

That makes a total reduction of $3,771,000 in the construction and rehabilitation items.

There was no change in the operation and maintenance recommendation of $24,800,000. The general administrative expenses total is $5,250,000 and the emergency fund total is $1 million.

Mr. FENTON. There are no changes in those three?

Mr. LINEWEAVER. No, sir. The net reduction is $5,087,000, as shown by table presented.

As you suggested, Mr. Chairman, as each one of these items come up, it will be more adequately explained.

Mr. JENSEN. What is the total of the reduction?

Mr. LINEWEAVER. The total reduction is $5,087,000, which leaves $190,117,000 net in construction and rehabilitation.

May I say, Mr. Chairman, that the table on page 2 will be revised to show the sources of funds, and the revised table will be delivered to the clerk.

STATUS OF RECLAMATION FUND

Mr. JENSEN. We will place the table on page 11, showing the status of the reclamation fund into the record.

(The matter referrred to follows:)

Status of the reclamation fund, fiscal years 1952–54

	Actual, 1952	Estimate, 1953	Estimate, 1954
Unappropriated balance brought forward	$55,900,987	$74,735,243	$79,088,143
Receipts:			
Collections, Bureau of Reclamation	11,373,830	11,200,000	12,000,000
Collections, other agencies	22,852,044	25,805,350	26,839,650
Power revenues	31,053,347	37,800,000	40,800,000
Returned to unappropriated receipts: Unobligated balances	5,232,391	2,630,000	830,000
Total available for appropriation	126,412,599	152,170,593	159,557,793
Deduct appropriation or estimate for—			
General investigations	3,810,000	3,200,000	5,320,000
Construction and rehabilitation	29,257,650	49,155,000	[1] 128,439,503
Operation and maintenance	12,476,494	14,940,450	19,415,290
General administrative expenses	5,478,203	5,250,000	5,250,000
Emergency fund, irrigation and power systems	400,000	400,000	1,000,000
Payments to farmers' irrigation district, North Platte project, Nebraska-Wyoming	10,088	12,000	8,000
Refunds and returns	150,000	125,000	125,000
Total appropriation or estimate	51,582,435	73,082,450	159,557,793
Deduct payments to certified claims	94,921		
Balance carried forward	74,735,243	79,088,143	

[1] Subject to availability of receipts.

Mr. JENSEN. Will you explain, briefly, your proposal to use the entire fund in the financing of the 1954 program.

PROPOSAL TO USE ENTIBE FUND IN 1954

Mr. LINEWEAVER. Mr. Golzé, will you cover that?

Mr. GOLZÉ. The plan at the present time, which is included in the budget for fiscal year 1954, is that certain amounts shown for operation and maintenance, for general investigations, for general administration, and for the emergency fund, which total approximately $31,000,000, will be derived from the reclamation fund. That amount subtracted from the amount in the fund at the end of the year, will leave a balance to be used for construction and rehabilitation. The amount that will be available for construction and rehabilitation under the language in the budget has to be estimated. The language

provides that the Treasury will advance general funds for our construction program for use through the year. At the end of the year, Treasury will check up and see how much is in the reclamation fund and will transfer what is available to offset as far as possible what they have advanced out of the general fund.

Mr. JENSEN. Do you have a fairly close estimate of what will be in the reclamation fund as of July 1, 1954?

Mr. GOLZÉ. Yes, sir; we do.

Mr. JENSEN. What is your estimate of that?

Mr. GOLZÉ. The preliminary estimate that will be available June 30, 1954, which would be available to apply to construction, is $128,439,503. That would be applied against the construction estimate in the budget of $193,888,000, which has now been revised to $190,117,000. So, $128 million of that would come out of the reclamation fund, on an estimated basis under the language proposed.

Mr. JENSEN. I am sure the members of the committee are pleased with this. It was at the request of this committee, under the chairmanship of Congressman Kirwan, who last year made this request that the reclamation fund be used in its entirety in paying the obligations that we have this proposal. We are glad that you have followed through on that order.

Mr. GOLZÉ. Mr. Chairman, there is one point on that which, perhaps, ought to be emphasized, and that is that this derivation for 1954 will be much larger than for this year, 1953, and for 1955, because heretofore the advances from the reclamation fund, or the derivations, have been the amount in the fund at the beginning of the fiscal year and the amount accumulated during the year has not been utilized but has been made available for the following fiscal year. We will have a very substantial amount in 1954, but it will be much smaller in 1955.

Mr. JENSEN. Mr. Aandahl, do you not agree that it is good business practice to use the money we have in the reclamation fund, rather than to have it lying idle and appropriating money out of the Treasury for this purpose.

Mr. AANDAHL. If it were left there and not used, what would be the purpose of that?

Mr. JENSEN. There is no purpose. It is just like anyone else who puts money away in the "old sock" and says, "Now, I am going to save that for a rainy day."

This money draws interest, does it not?

Mr. GOLZÉ. No, sir. The money in the reclamation fund is actually used by the Treasury in its general financing. They do not lock up the cash and hold it in reserve for us.

Mr. JENSEN. That is their business and this is our business.

Mr. GOLZÉ. Yes, sir.

Mr. JENSEN. We are responsible for what goes on in the Bureau of Reclamation and we are responsible for carrying on good business practices. Of course, we always try to look at the overall picture; but, after all, this is our business to see to it that the money is properly used and properly expended for the Bureau of Reclamation.

Mr. AANDAHL. Mr. Chairman, am I correct in assuming that under the previous system the transfer was delayed 6 months or a year?

Mr. JENSEN. It was delayed a year.

Mr. GOLZÉ. We recommended for use the amount in the fund at the end of each fiscal year and that was appropriated for the next year's program. There is a lag in receipts that come in during the year, which was the reason for the past practice.

Mr. JENSEN. During the whole year?

Mr. GOLZÉ. Yes, sir, but, of course, the fund has been building up under that system.

Mr. JENSEN. While we are on that, the question is: Should this committee use the full amount of the reclamation fund, as is estimated, or should we put a definite figure, showing the exact amount of money that we want to use out of the reclamation fund? If we do that, we will have to make sure that it is not more than will be in the reclamation fund.

I would recommend that you estimate what will be in the fund as of July 1, next, as near as you can, and then I think we should give some leeway. I think we should make sure we are not overexpending the reclamation fund, which we are not permitted to do, but I do feel that we should endeavor to ascertain if there will be $128 million in the reclamation fund as of July 1, 1954.

I think we should not appropriate out of that fund quite the full amount. We should only appropriate that amount which we are sure will be in the fund for use under that program.

Will you give us just as close an estimate on that amount as you possibly can? Then, I think this committee should reduce that amount by, say, $5 million to make sure that we will not overexpend the reclamation fund.

Mr. GOLZÉ. Yes, sir. The fund is built up by receipts from power revenues, collections from water users, and the products of the public domain. Some of these cannot be estimated too accurately.

Mr. JENSEN. There should be no question but what you can come within $5 million of estimating it.

Mr. LINEWEAVER. It would depend on certain circumstances which we would like to look into a little further, now that you have that in mind.

Mr. JENSEN. I think it is right and proper that we should say definitely how much money you will expend out of the reclamation fund in fiscal 1954.

Mr. GOLZÉ. Yes, sir.

Mr. JENSEN. It should be definite, rather than just a "guesstimate," I should say.

Mr. GOLZÉ. Yes, sir.

Mr. JENSEN. You would not have anything definite on which to base that sort of contention?

Mr. GOLZÉ. No, sir; we could not know until the end of the year what the actual appropriation for "Construction and rehabilitation." was.

Mr. JENSEN. If you do not think you can estimate it within $5 million, we will give you a leeway of $10 million?

Mr. LINEWEAVER. We would like to make some exploration of that, Mr. Chairman, within the next few days and see how closely we can come.

Mr. JENSEN. You certainly can come within $10 million.

Mr. GOLZÉ. I would think so.

Mr. JENSEN. Let us be quite sure about this. When you make your estimate on what will be in this reclamation fund at the end of 1954, be as accurate as you possibly can and then tell us that you cannot be off more than a certain amount of money or so many million.

Mr. GOLZÉ. We will do the best we can.

Mr. JENSEN. We need that information so that we can have something on which to base the action of this committee.

Mr. GOLZÉ. Yes, sir.

Mr. JENSEN. Governor Aandahl, what do you think about that?

Mr. AANDAHL. I am not quite sure, but I have an understanding that that language in the appropriation bill, which has been approved, or been suggested by the Bureau of the Budget, provides that the balance shall be transferred—whatever it is—but I do think it is probably well to know the amount and, at least, stipulate it in the report so that a Member of Congress, when acting on the bill, will know approximately how much money is being transferred. As far as the exact language of the bill is concerned, I think that is worded so it does not need to be specified, but I think in your report you will want the approximate amount so the Members of Congress will know what they are doing when they vote on it.

Mr. JENSEN. I think, Governor, we should determine how much money is going to be spent in fiscal 1954 out of the reclamation fund and then we will know what we are doing at all times instead of having it hanging in midair. If you do not know just how much money is being spent out of the reclamation fund, it is a very uncertain way of doing business; and, certainly, we can come within $10 million of the estimate of what the reclamation fund will be for 1954 at the end of 1954.

Mr. LINEWEAVER. I think we can do that all right, Mr. Chairman.

Mr. JENSEN. I am sure the committee would rather do that than just to say, "You spend it all in 1954." What is "all"? That is the question.

Mr. GOLZÉ. We could not know until after the end of the year.

Mr. JENSEN. All right, if you will do that, we will appreciate it.

Mr. LINEWEAVER. We will put in with that a statement of how it works.

(The matter referred to follows:)

RECLAMATION FUND

As requested by the chairman, a reexamination of the probable status of the reclamation fund for fiscal year 1954 has been made which discloses the following information:

Estimated receipts, fiscal year 1954:	
Collections, Bureau of Reclamation (construction charges, miscellaneous collections)	$12,000,000
Collections, other Federal agencies (mineral leases, etc., BLM)	27,900,000
Revenues from sale of power (BR and BPA)	36,655,000
A. Estimated total receipts	76,555,000
Estimate unappropriated, June 30, 1953	74,112,000
Estimated total amount in fund, fiscal year 1954	150,667,000

Estimated demand on fund, fiscal year 1954:	
Fiscal year 1954 budget estimates provide following amounts to be derived from reclamation fund:	
General investigations	$5,320,000
Operation and maintenance	19,415,290
General administrative expense	5,250,000
Emergency fund	1,000,000
B. Total requirements	30,985,290
Balance available in fiscal year 1954 (A minus B)	119,681,710
Reserve	9,681,710
C. Available for appropriation to C. and R	110,000,000

On the basis of this analysis, $110 million will be available in the reclamation fund for construction and rehabilitation for fiscal year 1954. The availability of this amount and the amounts from the fund to be provided for O. and M., GAE, GI, and emergency fund will be dependent on the balance in the fund on June 30, 1953, plus receipts during fiscal year 1954. To meet program costs it will be necessary that the income to the fund be deposited about as promptly as received. Under procedures in effect in fiscal year 1953 the Treasury advanced moneys to its disbursing offices to the credit of the Bureau of Reclamation from the reclamation fund only to the extent that funds were available therein. For fiscal year 1953 no difficulties were encountered because appropriations from the fund are well within amounts on hand.

To avoid receipt account limitations in fiscal year 1954 and the possibility of suspension of work during the year, agencies with revenues properly creditable to the reclamation fund should deposit such revenues in the reclamation fund not less often than once each month. The Department of the Treasury should advance funds to its disbursing offices for use by the Bureau of Reclamation on receipt of proper request from officials of the Department of the Interior with the derivations from the fund not to exceed the amounts designated by the Congress for each appropriation item. In case the fund lacks a sufficient balance to meet the program needs of the Bureau, advances from the general funds of the Treasury should be authorized to be reimbursed from subsequent income to the fund.

To accomplish these procedures certain language changes in the appropriation text are recommended. It is recommended that the language shown for the Bureau of Reclamation under "Construction and rehabilitation" in italics on page 727 of the budget for fiscal year 1954 be stricken and insert in lieu thereof the following: "of which $110,000,000 shall be derived from the reclamation fund." It is recommended that the "Administrative provisions" section of the reclamation portion of the appropriation text which appears on pages 736 and 737 of the budget for fiscal year 1954 be amended to include the following:

"The Department of the Treasury shall advance to its disbursing officers, on receipt of request from the Department of the Interior, funds from the reclamation fund not to exceed the amounts shown herein to be derived from the fund; *Provided*, That should the Reclamation Fund not contain a sufficient balance to meet the request of the Department of the Interior, the additional amount required shall be advanced to the disbursing offices by the Treasury from its general funds, subject to reimbursement by sebsequent income to the fund."

It is further recommended that the "General provisions" chapter of the appropriation text of the Department of the Interior appearing on page 789 of the budget for fiscal year 1954 be amended to include the folowing new section:

"All receipts accruing to the reclamation fund (including revenues from Hungry Horse project exclusive of transmission costs) shall be deposited in the fund not less often than once each month by the receiving agency."

Mr. LINEWEAVER. I would like to submit this statement of Mr. Golzé, which gives some of the details.

Mr. JENSEN. All right; without objection, it will be inserted at this point.

(The matter referred to follows:)

BUREAU OF RECLAMATION CONSTRUCTION AND REHABILITATION LANGUAGE CHANGE WITH RESPECT TO RECLAMATION FUND

The purpose of the language appearing on page 727 of the Budget of the United States for the fiscal year 1954 is to transfer all moneys in the reclamation fund to the general fund of the Treasury at the end of fiscal year 1954. The budget provides for specific derivations from the reclamation fund for the appropriations for general investigations, operations and maintenance, general administrative expenses, and the emergency fund. For construction and rehabilitation the amount to be derived from the reclamation fund was left open, to be determined at the end of the year as equivalent to the amount in the fund at the end of the year. The Congress, therefore, under the proposed language, will appropriate an undetermined amount for construction and rehabilitation for fiscal year 1954 from the reclamation fund.

In order that the construction and rehabilitation program of the Bureau may be carried out during fiscal year 1954 it will be necessary for the Treasury under this language to advance the full amount of this appropriation item out of its general fund. At the end of the fiscal year it would then reimburse itself with whatever amount was in the reclamation fund. An estimate of the amount in the reclamation fund of June 30, 1954, which will be available for application to the construction and rehabilitation appropriation, is $128,439,503. This amount compares with $49,155,000 specifically made available by the Congress from the fund for the construction and rehabilitation appropriation for fiscal year 1953. The preliminary estimate of the amount available for application in 1954 is obtained as follows:

Unappropriated balance in fund June 30, 1954	$79,088,143
Income to fund from authorized sources during fiscal year 1954	79,639,650
Expired appropriations returned to fund	830,000
Total amount available in fund, fiscal year 1954	159,557,793
Amounts shown in fiscal year 1954 budget to be derived from reclamation fund:	
General investigations	5,320,000
Operation and maintenance	19,415,290
General administrative expenses	5,250,000
Emergency fund	1,000,000
Permanent appropriations	133,000
Total, specific derivations	31,118,290
Balance to be credited to construction and rehabilitation at end of fiscal year 1954	128,439,503

The reason for the large difference is that heretofore the Congress has appropriated out of the reclamation fund each fiscal year a total amount equivalent to what is in the fund at the beginning of the fiscal year, disregarding anticipated receipts during the year. The receipts coming in during the year have been taken into account in estimating amounts available for the succeeding fiscal year. Under the language proposed in the budget for fiscal year 1954, by adding to the amount available at the beginning of the fiscal year the anticipated receipts during the year, the larger sum of approximately $159 million may be available in fiscal year 1954. Under this plan at the beginning of fiscal year 1955 there will be zero amount in the reclamation fund. All appropriations for fiscal year 1955 from the reclamation fund would have to be financed from estimated receipts during the year. This would require the Treasury to advance general funds not only for construction and rehabilitation as proposed for fiscal year 1954 but also for the other appropriations of the Bureau of Reclamation.

There is attached a chart illustrating the effects of the two different methods of applying the reclamation fund in financing appropriations to the Bureau of Reclamation. Plan A, shown on the chart, is the method that has been used by the Congress for the past 5 years and illustrates the limitation of total appropriations from the fund to the estimated amount of money in the fund at the beginning of each fiscal year. Plan B illustrates the application of the proposed language change in the fiscal year 1954 budget whereby the total appropriations

will equal the estimated amount available in fiscal year 1954, including receipts accruing during the year. While there will be a large amount available for appropriation in fiscal year 1954 under plan B, in the succeeding fiscal years the amounts will be substantially less as shown by the chart. Over a period of years the difference between the total amounts appropriated from the fund under either plan A or plan B will be small.

The reclamation fund, established by the Reclamation Act of 1902, receives a share of the oil royalties and other income from the public domain, power revenues from the Federal power plants on reclamation projects, repayments by water users for construction costs of irrigation projects and other miscellaneous income. In addition to acting as a common depository for this type of income the reclamation fund is also the depository for a portion of the revenues earmarked as a replacement reserve of the power system and provides a source of funds for the permanent appropriations for refunds and for carriage of water for the Northport Irrigation District in Nebraska.

The advantages of the proposed language change are largely that in fiscal year 1954 it will make greater use of the income to the fund and reduce the appropriation from the general fund required for the construction and rehabilitation program of the Bureau of Reclamation. This will be a 1 year benefit because, as shown on the attached chart, the appropriations in the succeeding years from the reclamation fund and the corresponding appropriations from the general fund will be about the same under the new plan as under the old plan.

Project Repayment Statistics

Mr. Jensen. We will insert in the record, without objection, the tables on pages 12 through 20, showing the status of construction and rehabilitation charges, paid and unpaid, as of June 30, 1952.

(The matter referred to follows:)

Statement of construction and rehabilitation charges paid and unpaid as of June 30, 1952

State and project	Total value of contracted repayment	Fiscal year 1952 matured charges	Fiscal year 1952 matured charges paid	Total charges due and unpaid	Percent repaid
(1)	(2)	(3)	(4)	(5)	(6)
Construction:					
Total as of June 30, 1951	$508,710,713	$94,360,992	$93,035,699	$1,325,293	98.6
Prior year matured charges liquidated in fiscal year 1952			269,340	−269,340	
Arizona:					
Gila	42,000,000				
Salt River		130,886	130,886		100.0
Arizona–California: Yuma (including Yuma auxiliary)	−15,311	109,624	106,069	3,555	96.8
California:					
Cachuma	3,600,000				
Central Valley	29,503,244				
Orland	9,361	40,900	31,091	9,809	76.0
Colorado:					
Fruitgrowers Dam		5,974	5,974		100.0
Grand Valley		65,624	65,624		100.0
Pine River		23,056	18,750	4,306	81.0
Uncompahgre		60,000	60,000		100.0
Idaho:					
Boise	−4,299	522,721	513,514	9,207	98.2
Minidoka	201	376,508	374,584	1,924	99.5
Rathdrum Prairie:					
Hayden Lake	−6,591				
Post Falls		4,750	4,750		100.0
Montana:					
Bitter Root		13,645	13,645		100.0
Frenchtown		5,000	5,000		100.0
Huntley		38,168	38,168		100.0
Intake		235	235		100.0
Milk River	8,000	100,793	63,116	37,677	63.0
Sun River		109,520	108,172	1,348	99.0
Montana-North Dakota:					
Lower Yellowstone		142,360	94,580	47,780	66.0
Missouri River Basin: Missouri-Souris Division	66,000				

Statement of construction and rehabilitation charges paid and unpaid as of June 30, 1952—Continued

State and project	Total value of contracted repayment	Fiscal year 1952 matured charges	Fiscal year 1952 matured charges paid	Total charges due and unpaid	Percent repaid
(1)	(2)	(3)	(4)	(5)	(6)
Nebraska:					
Mirage Flats		$1,000	$1,000		100.0
Missouri River Basin: Frenchman-Cambridge Division	−$356,300				
Nebraska-Wyoming: North Platte		292,189	278,455	$13,734	95.3
Nevada:					
Humboldt		33,903	33,903		100.0
Newlands		94,771	94,771		100.0
Truckee Storage		25,000	25,000		100.0
New Mexico:					
Carlsbad		64,116	64,116		100.0
Middle Rio Grande	16,533,000				
New Mexico-Texas: Rio Grande	−10,960	212,353	212,353		100.0
Oklahoma: W. C. Austin		76,842	76,842		100.0
Oregon:					
Arnold		4,202	4,202		100.0
Baker		5,770	5,770		100.0
Burnt River		14,992	14,978	14	99.9
Deschutes	123,667	37,023	37,023		100.0
Umatilla		34,404	2,714	31,690	7.9
Vale		87,898	87,898		100.0
Oregon-California: Klamath	165,604	100,949	100,250	699	99.3
Oregon-Idaho: Owyhee		216,396	216,396		100.0
South Dakota:					
Belle Fourche		38,700	38,700		100.0
Rapid Valley	600,000	12,500	12,500		100.0
Texas: Balmorhea		2,799	2,799		100.0
Utah:					
Hyrum		17,930	17,930		100.0
Moon Lake		39,806	39,806		100.0
Newton		8,750	8,750		100.0
Ogden River	−5,938	74,479	74,479		100.0
Provo River	10,128,920	717,667	717,667		100.0
Sanpete		9,335	9,335		100.0
Scofield		5,400	5,400		100.0
Strawberry Valley		71,065	71,065		100.0
Weber River (Salt Lake Basin)		88,193	88,193		100.0
Washington:					
Columbia Basin	36,568	3,257	3,257		100.0
Okanogan		8,946	8,946		100.0
Yakima		374,124	374,124		100.0
Wyoming:					
Riverton	13,627	82,546	41,273	41,273	50.0
Shoshone	−91,961	135,469	135,469		100.0
Subtotal, construction	611,007,545	99,103,530	97,844,561	1,258,969	98.7
Rehabilitation and betterment:					
Total as of June 30, 1951	13,289,501	64,845	59,114	5,731	91.2
Prior year matured charges liquidated in fiscal year 1952			5,731	−5,731	
Arizona: Salt River	2,796,662	81,152	81,152		100.0
California: Orland		12,996	12,571	425	96.7
Colorado: Grand Valley	400,000				
Montana: Sun River	20,000				
Nebraska-Wyoming: North Platte	719	9,394	7,840	1,554	83.5
South Dakota: Belle Fourche	400,000				
Washington: Okanogan	126,000				
Wyoming: Shoshone	257,000				
Subtotal, rehabilitation and betterment	17,289,882	168,387	166,408	1,979	98.8
Grand total	628,297,427	99,271,917	98,010,969	1,260,948	98.7

Statement of annual operation and maintenance assessments paid and unpaid as of June 30, 1952

State and project	Assessments accrued	Assessments paid	Assessments accrued and unpaid	Percent paid
Total as of June 30, 1951	$56, 282, 787	$56, 122, 114	$160, 673	99. 7
Prior year accrued assessments liquidated in fiscal year 1952		160, 673	−160, 673	
Operation and maintenance assessments accrued during fiscal year 1952:				
Arizona-California:				
All-American Canal (Imperial division)	40, 120	6, 280	33, 840	15. 7
Yuma (including Yuma auxiliary)	177, 208	169, 398	7, 810	95. 6
California: Orland	93, 999	92, 904	1, 095	98. 8
California-Oregon: Klamath	120, 362	119, 597	765	99. 4
Colorado:				
Pine River	4, 800	4, 800		100. 0
Mancos	7, 000	7, 000		100. 0
Idaho:				
Boise	30, 975	30, 975		100. 0
Minidoka	84, 003	83, 905	98	99. 9
Rathdrum Prairie (Post Falls)	2, 700	2, 700		100. 0
Montana:				
Missoula Valley	1, 859	1, 859		100. 0
Milk River	146, 217	110, 233	35, 984	75. 0
Missouri River Basin: Savage unit (Yellowstone division)	5, 800	5, 800		100. 0
Sun River	4, 987	4, 987		100. 0
Nebraska-Wyoming: North Platte	107, 106	93, 288	13, 818	87. 1
New Mexico: Carlsbad	7, 200	7, 200		100. 0
New Mexico-Texas: Rio Grande	940, 000	940, 000		100. 0
Oklahoma: W. C. Austin	175, 000	175, 000		100. 0
Oregon: Vale	4, 688	4, 688		100. 0
Oregon-Idaho: Owyhee	523	523		100. 0
South Dakota:				
Belle Fourche	2, 051	2, 051		100. 0
Rapid Valley	5, 000	5, 000		100. 0
Utah: Provo River	6, 683	6, 683		100. 0
Washington: Yakima	407, 236	392, 825	14, 411	96. 5
Wyoming: Shoshone	7, 489	7, 489		100. 0
Total, fiscal year 1952	2, 383, 006	2, 275, 185	107, 821	95. 5
Total to June 30, 1952	58, 665, 793	58, 557, 972	107, 821	99. 8

Statement of annual water rental charges paid and unpaid as of June 30, 1952

State and project (1)	Charges accrued (2)	Charges paid (3)	Charges accrued and unpaid (4)	Percent paid (5)
Total as of June 30, 1951	$22,203,072	$22,109,231	$93,841	99.4
Prior year assessments liquidated in fiscal year 1952		93,841	−93,841	
Water rental charges accrued during fiscal year 1952:				
Arizona: Gila	211,513	193,156	18,357	91.3
Arizona-California: Yuma (including Yuma auxiliary)	5,884	5,850	34	99.4
California:				
Central Valley	1,294,871	1,294,358	513	99.9
Cachuma	2,633	2,630	3	99.9
Orland	900	900		100.0
California-Oregon: Clamath	211,763	207,247	4,516	97.9
Colorado:				
Colorado-Big Thompson	4,323	4,323		100.0
Grand Valley	22,913	22,913		100.0
Uncompahgre	2,694	2,694		100.0
Idaho:				
Boise	252,685	157,712	94,973	62.4
Minidoka	222	222		100.0
Montana: Milk River	1,099	1,099		100.0
Montana-North Dakota: Missouri River Basin, Missouri-Souris District	22,500	15,000	7,500	66.7
New Mexico: Tucumcari	203,039	203,039		100.0
Oregon:				
Deschutes	244,215	244,215		100.0
Umatilla	17,838	17,838		100.0
Utah: Provo River	73,170	73,170		100.0
Washington: Columbia Basin	30,410	30,410		100.0
Wyoming:				
Kendrick	18,582	18,582		100.0
Riverton	21,691	20,829	862	96.0
Shoshone	65,945	65,102	843	98.7
Total, fiscal year 1952	2,708,890	2,581,289	127,601	95.3
Total to June 30, 1952	24,911,962	24,784,361	127,601	99.5

Mr. JENSEN. At this point we will insert into the record the overall personnel and turnover figures, which have been previously requested and ask you to briefly summarize them.

Mr. LINEWEAVER. Mr. Chairman, may I ask that that go over, because we are getting some additional information that was not available this morning.

Mr. JENSEN. All right.

ECONOMISTS

Mr. JENSEN. Under this "General program" item, we note you have in the Bureau a total of 140 economists, at a total salary of $895,000. What is the need for all these economists and just what do they do?

Mr. LINEWEAVER. The economic work of the Bureau of Reclamation, Mr. Chairman, for a good many years was sadly neglected. Now, whether or not, in the light of the program, 140 should be maintained is something that we are giving study to right now. I am not prepared to recommend, or suggest, to Governor Aandahl that 140 are needed, but he has instructed us to look into this as well as other personnel matters and analyze them to see whether or not the Bureau requires whatever number is on the roll.

As I started to say, the economic work of the Bureau for a great many years was neglected. In other words, we did a lot of shooting from the hip, without thoroughly investigating the agricultural phases of the projects in connection with general investigations, which resulted in some very sad experiences.

(Discussion off the record.)

Mr. JENSEN. Mr. Aandahl, can we expect you to look into this matter quite extensively and see if we need 140 economists in the Department of Interior in the Reclamation Bureau?

Mr. AANDAHL. Yes, sir. I intend to check into personnel requirements all through the Bureau, including the ones you just mentioned.

Mr. LINEWEAVER. We have discussed the matter, and we are thoroughly alert to it.

SOIL AND MOISTURE CONSERVATION

Mr. JENSEN. There is an item of $940,000 for the soil and moisture program. Will you explain that, briefly? Of course, I know that is just on lands where projects are under construction.

Mr. LINEWEAVER. The soil and moisture program, Mr. Chairman, is not only confined to the reclamation projects that are under construction, or in operation, but also to the withdrawn public lands for reclamation purposes.

You may recall that for many years this was handled directly under the Department, but I think in 1948, in the 80th Congress, it was broken down and the responsibility was put on the various agencies of the Department to carry out the program.

We have tried to make this more of a constructive program in the direction of soil conservation in the saving of water, the prevention of erosion and the retarding of sedimentation, and for other purposes, in cooperation with other agencies of the Department and the Department of Agriculture and the Western States agricultural colleges. We think we have a very good program. Compared with last year, we had $833,100 and this year the Bureau of the Budget recommended $920,000.

I may say that the responsibilities of the Department originated under the Soil Conservation Act and the reorganization plan of the latter 1930's, and in the reclamation end of the problem, we are concerned, as I said, with the development of effective work programs for the protection of water and control of the land involved.

We do have to apply widely varying procedures, ranging from demonstrating the seeding of irrigation canal banks to prevent their sluffing off and other ways to control the soil and prevent soil and water losses on several million acres.

Mr. JENSEN. Those are all the questions I care to ask at this time on the general program.

COST OF RECLAMATION PROGRAM TO DATE

Mr. FENTON. I certainly agree with your statement, Mr. Lineweaver, that there is need for more careful investigations and wisely planned investigations before construction.

What is the total amount of money that you say you will require from 1953 to 1959, exclusively for construction programs?

Mr. LINEWEAVER. A little over $2 billion. I believe the correct figure is $2,000,299,038.

Mr. FENTON. I did not total it all, but it is over $2 billion?

Mr. GOLZÉ. It is slightly over $2 billion.

Mr. FENTON. When did your reclamation program start?

Mr. LINEWEAVER. The Reclamation Act of 1902 was approved by President Theodore Roosevelt on June 17 of that year and construc-

tion got underway within the next year or two. The first water was delivered in 1906.

Mr. FENTON. How much was spent on construction from 1902 until 1959, or up to the present time?

Mr. LINEWEAVER. More than 2½ billion dollars. I will have to get you the exact figure on appropriations.

Mr. FENTON. If you will, please.

(The information requested follows:)

Appropriations from Reclamation and other funds, fiscal years 1902–53

Fiscal year	Reclamation fund		General fund		Colorado River Dam fund	Emergency relief funds [2]	Permanent appropriations	Total
	Regular [1]	Power revenue	Regular	Colorado River FW and LS				
1902	[3] $165,000							[3]
1903	[3] 5,950,000							[3]
1904	[3] 18,440,000							[3] $2,000,000
1905	[3] 8,758,000							[3]
1906	[3] 27,494,961							[3] 15,363,800
1907	[3] [4] 443,569,161							[3]
1907	18,176,161							[3] 18,051,161
1908	9,562,038							9,562,038
1909	9,180,700							9,180,700
1910	8,183,300							8,183,300
1911	26,896,790							26,896,790
1912	8,262,367							8,262,367
1913	8,300,508							8,300,508
1914	15,931,922							15,931,922
1915	1,261,411							1,261,411
1916	13,530,000							13,530,000
1917	8,887,557		$15,000					8,902,557
1918	8,227,000		310,213					8,537,213
1919	9,397,081		443,196					9,840,277
1920	7,300,000		548,927					7,848,927
1921	8,463,000		661,177					9,124,177
1922	20,266,000		335,871					20,601,871
1923	14,800,000		559,530					15,359,530
1924	13,800,000		314,067					14,114,067
1925	11,890,809							11,890,809
1926	12,563,240			$50,000				12,613,240
1927	7,436,320		40,000	35,000				7,511,320
1928	12,148,800		15,000	35,000				12,198,800
1929	14,138,400	$190,000	15,000	100,000				14,443,400
1930	8,253,000	390,000	10,660,000	100,000				19,403,000
1931	9,087,000	395,000		100,000				9,582,000
1932	6,971,000	300,000	25,000,000	100,000				32,371,000
1933	2,442,288	375,000	13,050,000					15,867,288
1934	3,003,000	405,000	8,000,000	48,000		$103,535,000		114,991,000
1935	860,750	316,000				34,076,000		35,252,750
1936	1,022,100	366,000	15,900,000	50,000		25,438,000		42,776,100
1937	12,028,600	316,000	34,850,000		$350,000	[4] 4,873,000		42,671,600
1938	11,991,600	331,000	30,655,000	15,000	500,000	37,047,500	$1,100,000	81,640,100
1939	10,574,600	366,000	32,980,000	15,000	500,000	[4] 2,502,488	4,600,000	46,533,112
1940	13,269,600	606,000	64,200,000	15,000	575,000	28,347	5,700,000	84,393,947
1941	9,429,600	571,000	63,750,000	15,000	768,000	[4] 124,300	6,600,000	81,009,300
1942	7,446,600	664,400	94,245,031	50,000	1,000,000	[4] 19,961	2,600,000	105,986,070
1943	2,651,060	956,900	86,628,565	47,895	1,379,250	[4] 1,131	2,600,000	94,262,539
1944	2,422,500	2,091,975	35,578,000	75,000	1,443,100	[4] 72,709	5,669,468	47,207,334
1945	5,321,000	2,328,800	17,734,200	340,000	2,200,000	[4] 22,332	5,282,501	33,184,169
1946	34,089,290	2,528,600	82,858,000	612,500	2,550,000		4,491,718	127,130,108
1947	36,315,968	3,284,245	75,931,805	100,000	1,814,330	[4] 30,396	4,806,879	122,222,831
1948	20,127,250	5,549,500	115,420,288		2,088,000		5,545,400	148,730,438
1949	29,952,663	6,999,601	226,801,503		2,450,000		4,693,475	270,897,242
1950	35,447,705	9,327,097	311,434,175		2,123,100		8,034,825	366,366,902
1951	46,917,365		222,453,635		2,308,000		5,650,514	277,329,514
1952	51,422,347		180,665,175		2,171,000		6,505,000	240,763,522
1953	72,945,450		130,859,541		2,643,000		3,632,000	210,079,991
Total	719,834,540	38,658,118	1,882,912,899	1,903,395	26,862,780	192,478,530	77,511,780	2,940,162,042

[1] Prior to fiscal year 1916 funds were made available from the Reclamation fund by allotment authorized by the Secretary of the Interior.

[2] Emergency relief funds include allocations from NIRA, PWA, WPA, and ERA funds.

[3] Allotments made prior to Fallon, Nev., conference on July 27, 1907, were canceled and summary allotments issued. Original amounts excluded from total column.

[4] Credit.

Appropriations by function, fiscal years 1902–53

Fiscal year	Construction and rehabilitation	Operation and maintenance [1]	General investigations	General administrative expenses	Emergency fund	Total
1902				[2] $165,000		[2]
1903	[2] $5,500,000			[2] 450,000		[2]
1904	[2] 18,440,000					[2] $2,000,000
1905	[2] 8,758,000					[2]
1906	[2] 27,494,961					[2] 15,363,800
1907	[2] [3] 42,954,161			[2] 615,000		[2]
1907	[2] 17,367,562		$720,000	88,599		[2] 18,051,161
1908	9,380,638		70,000	111,400		9,562,038
1909	9,114,700		[3] 34,000	100,000		9,180,700
1910	8,183,300					8,183,300
1911	26,804,000			92,790		26,896,790
1912	5,944,000		12,000	2,306,367		8,262,367
1913	7,114,000		221,489	965,019		8,300,508
1914	13,055,565		99,926	2,776,431		15,931,922
1915	538,694		165,490	557,227		1,261,411
1916	11,577,175	$1,902,825	50,000			13,530,000
1917	6,702,612	2,134,945	65,000			8,902,557
1918	6,355,868	2,131,345	50,000			8,537,213
1919	7,105,536	2,534,660	200,081			9,840,277
1920	5,376,112	2,397,815	75,000			7,848,927
1921	6,277,812	2,776,365	70,000			9,124,177
1922	17,032,350	3,469,500	100,021			20,601,871
1923	11,675,530	3,209,000	475,000			15,359,530
1924	10,909,067	3,005,000	200,000			14,114,067
1925	8,259,000	2,887,000	379,409	365,400		11,890,809
1926	9,585,240	2,968,000	60,000			12,613,240
1927	4,299,320	2,997,000	215,000			7,511,320
1928	10,029,000	1,752,800	240,000	177,000		12,198,800
1929	12,503,900	1,452,500	315,000	172,000		14,443,400
1930	17,525,000	1,355,000	350,000	173,000		19,403,000
1931	7,756,000	1,448,000	200,000	178,000		9,582,000
1932	30,700,500	1,417,500	50,000	203,000		32,371,000
1933	14,575,788	1,106,500	25,000	160,000		15,867,288
1934	109,618,200	1,071,100	4,135,000	166,700		114,991,000
1935	37,966,000	974,900	[3] 3,790,000	101,850		35,252,750
1936	39,200,000	1,106,600	838,000	1,631,500		42,776,100
1937	39,691,500	1,509,600	220,500	1,250,000		42,671,600
1938	76,570,000	[1] 2,787,600	460,000	1,822,500		81,640,100
1939	38,780,000	5,940,600	225,000	1,587,512		46,533,112
1940	74,521,783	7,275,600	960,074	1,636,490		84,393,947
1941	70,200,922	8,561,600	613,268	1,633,510		81,009,300
1942	97,532,059	5,082,000	1,775,011	1,597,000		105,986,070
1943	85,801,170	6,155,065	1,414,599	891,705		94,262,539
1944	34,995,339	10,649,543	899,952	662,500		47,207,334
1945	20,351,868	9,512,301	2,575,000	745,000		33,184,169
1946	109,430,740	8,993,168	4,750,000	3,956,200		127,130,108
1947	101,781,972	10,580,859	5,500,000	4,360,000		122,222,831
1948	128,978,538	14,121,900	2,500,000	3,130,000		148,730,438
1949	246,402,313	15,084,929	4,550,000	3,860,000	$1,000,000	270,897,242
1950	335,602,223	21,440,997	4,950,000	4,373,682		366,366,902
1951	243,733,000	21,097,514	5,635,000	6,864,000		277,329,514
1952	207,602,725	22,482,594	4,500,000	5,778,203	400,000	240,763,522
1953	177,797,991	22,632,000	4,000,000	5,250,000	400,000	210,079,991
(4)	[3] [4] 5,921,073	[4] 4,762,791	[4] 1,158,282			
Total	2,583,624,339	242,769,016	52,244,102	59,724,585	1,800,000	2,940,162,042

[1] Operation and maintenance includes permanent appropriations totaling $73,879,780 since 1938.
[2] Allotments made prior to Fallon, Nev., conference on July 27, 1907, were canceled, and summary allotments issued. Original amounts are excluded from total column.
[3] Credit.
[4] Distribution of allotments prior to fiscal year 1916, water conservation and utility funds, and compensation increase. Not available by fiscal year.

NOTE.—Includes funds allocated from NIRA, PWA, and ERA; and allotments made to the Reclamation Service by the Secretary of the Interior prior to fiscal year 1916. The column for "Emergency fund" above refers to the appropriated emergency fund for irrigation and power systems. General administrative expenses include appropriations previously titled "Salaries and expenses" and "General accounts." Bureau of Reclamation total expenditures, 1902 through June 30, 1952: $2,533,171,692.

Mr. FENTON. Is there anything in the original act which says there is any limitation of time for this program?

Mr. LINEWEAVER. No, sir.

Mr. FENTON. It is a continuous program?

Mr. LINEWEAVER. Yes, sir.

Mr. FENTON. How about this rehabilitation and betterment program?

Mr. LINEWEAVER. I think it was in the 80th Congress when we had the very serious matter on several projects where maintenance had been held up; first, during the 1930's because of low incomes; then because of lack of material and supplies during World War II. We were confronted by the problem that the irrigation districts were unable to bring their projects up to proper operating conditions without overburdening the water users and affecting their ability to repay the construction charges. We came before the Appropriations Committee and then before the legislative committee with the facts and the act of October 7, 1949, was passed, and amended by the act of March 3, 1950, under which we must have repayment contracts for the amounts appropriated before the expenditure is made.

Mr. FENTON. I wish you would put in the record a list of the projects that you have had rehabilitated in this betterment program.

Mr. LINEWEAVER. I will be glad to, sir.

Mr. FENTON. And why, and the amount of money involved, together with the information as to what period of time these projects are supposed to pay out or liquidate themselves.

Mr. LINEWEAVER. All right, sir; I will be very glad to do that.

(The information requested appears on pp. 1399 to 1406.)

NEW POWER PLANTS

Mr. FENTON. I notice you have in your "new starts," certain figures in here and I notice a couple of projects that are going to require more powerplants.

Mr. LINEWEAVER. Yes, sir. I may say, Dr. Fenton, that is why I pointed out in the recommendations of Governor McKay that the American Falls powerplant has been eliminated and the Deer Creek powerplant on the Provo River was left in the estimate, and also the Roza power plant in the Yakima project in Washington. Both of those are small plants.

Mr. FENTON. What is the purpose of those plants?

Mr. LINEWEAVER. The Deer Creek plant is to take advantage of the work which was done on Deer Creek Dam which was constructed in the latter 1930's and provision was made then for the installation of a powerplant. I think the foundation of the powerplant is in, and the penstocks are in I know, and the installing of the powerplant has awaited negotiations between the Provo River Water Users Association and the Bureau as to the proper time to install the plant. There

has been a good deal of discussion over the years about it. So, the Secretary made a finding of feasibility last summer with respect to it and recommended the initiation of construction.

The Roza powerplant is the Roza main canal. When it was constructed back in the thirties, provision was made for capacity to provide power water for this powerplant, I think, at a cost of something like a million or so dollars. But the construction of the plant again has been a matter of negotiation between the Roza Irrigation District and the Bureau, and we think we are about at a point where an agreement has been reached.

Mr. FENTON. Will this produce surplus power or is this only for irrigation purposes?

Mr. LINEWEAVER. Both plants would assist the water users in taking advantage of the water without interference with the irrigation operations.

Mr. FENTON. Will this produce surplus power?

Mr. LINEWEAVER. Do you mean will the power be needed in the areas, or will it be surplus?

Mr. FENTON. What is the capacity of these plants, the generating capacity?

Mr. MCPHAIL. The capacity of the Roza plant is 10,000 kilowatts. It will nearly all be used during the irrigation season for irrigation pumping. There will be some surplus power during the nonirrigation season, which can be fitted into the general marketing system in the northwest area.

The capacity of the Deer Creek plant is 5,000 kilowatts and it would be used to some small extent for irrigation pumping, but primarily available for general marketing in the area.

Mr. FENTON. General marketing in the area?

Mr. MCPHAIL. Yes, sir.

Mr. JENSEN. The request is made for a powerplant on the Roza project in the amount of over $2 million. We discussed that item yesterday with Congressman Holmes when he was before the committee. Now, here is the thing that I think we have to consider so far as the expenditure of this nmoey for a powerplant on that individual irrigation project is concerned, and that is this: There is sufficient power now which can be used to do this pumping on the Roza project. That power can be purchased at a very low rate from the Bonneville Power Administration. In fact, it can be purchased for in the neighborhood of 2 mills per kilowatt. If someone can justify the expenditure of over $2 million for a powerplant for an individual irrigation project of this size, in view of the fact that this power can be purchased in adequate supply at a very, very low rate at this time, then I would like to hear them speak up and tell us how that expenditure can be justified.

Mr. MCPHAIL. Mr. Chairman, do you want us to go into the justification for that particular project at this time?

Mr. JENSEN. Well, of course, we know what the justification is, Mr. McPhail, and the truth of the matter is there is no justification for it that is at all in line with good business principles, as I see it. That power plant will be used to produce power to run the pumping plant for the Roza project during the irrigation season, after which time, if the powerplant is operated, it will, of course, produce power which will be turned in to the Bonneville grid system. But that power at present construction cost is going to be mighty high-priced power, much higher than the cost of producing power in the overall Bonneville area. Certainly I want to see to it that that very wonderful irrigation project, the Roza project, where I have been and seen with my own eyes, will get plenty of power, and they will get all the power they need at a postage-stamp rate from the Bonneville Power Administration without the expenditure of over $2 million. The estimate is what?

Mr. MCPHAIL. $2,677,000.

Mr. JENSEN. $2,677,000. And we all know that the total cost will be possibly 50 percent more than that.

ADMINISTRATION OF BOULDER CITY

Mr. FENTON. I have only 1 or 2 more questions on the general statement. You state that the procedure inaugurated under Secretarial Order No. 2650 dated July 27, 1951, "is a forerunner toward the ultimate objective of establishing Boulder City as a self-governing and self-supporting municipality under the laws of the State of Nevada." Has any progress been made towards Boulder City becoming a self-governing and self-supporting municipality?

Mr. LINEWEAVER. Yes, sir. We feel the first progress was made when we separated the strictly municipal expenses from the Boulder or Hoover Dam appropriation, so as to tag precisely what the city is costing. That was done under the directions of the Appropriations Committees.

Now, the question of legislation is one that has given us considerable trouble, and I do not feel we have made the progress on that we had hoped to make, because of differences of opinion as to how the city should be set up and how it should be financed.

Mr. FENTON. You certainly have had an awful lot of time since that place was organized.

Mr. LINEWEAVER. I certainly agree with you, and we run temperatures up almost every day at the Bureau on that problem.

Mr. FENTON. That is almost the biggest steal on the American taxpayers I know of, particularly people in the east, that we have to pay for their schooling out there, when municipalities in my own district have now gotten to such a low degree in being able to collect taxes to keep our school systems going, and I blame this kind of program for that situation. The continuing development of certain areas of this country with cheap power and that sort of thing detracts from the

populous eastern portion of the country in which our industrial development is being curtailed every day in the year. Then we in the East have to pay the taxes for people who go out there and derive their living from governmental projects. In other words, we in the East are giving ourselves a stab in the back by this sort of thing.

When we were out there in 1948 we thought we were going to have that thing remedied. It seems to me since Boulder Dam has been in operation they have had plenty of time to organize a municipal government to take care of their own welfare.

Mr. LINEWEAVER. We would appreciate any asistance that this committee can give us in expediting the legislation which is a prerequisite to straightening out that situation.

Mr. FENTON. Why does the Federal Government have to give those people authority to organize that municipality?

Mr. LINEWEAVER. Because the Government owns all the land; that is primarily the reason. And we have an obligation in regard to the protection and operation of Hoover Dam, with something like 1 million kilowatts of capacity, and the Government has a primary interest in it because it owns the land on which the city is located.

Mr. FENTON. If that is not socialistic, it certainly borders on being socialistic, in my opinion.

SETTLER ASSISTANCE PROGRAM

Then there is a request of $800,000, nonreimbursable funds, to inaugurate a program of agricultural services to farmers. Why is that necessary?

Mr. LINEWEAVER. The Department of Agriculture people are coming in at 2 o'clock. I would like to say that this request followed the direction of the Appropriations Committees in the conference report, and primarily it started with the Agriculture Subcommittee.

Mr. FENTON. Well, if that is not a duplication of effort on the part of this Government, I do not know what it is. Certainly the farmers out there are fully capable of handling their own affairs, I think. If these projects are as great as they have been pictured to this committee to be by people in the area, with the wonderful advantages derived from irrigation, I do not know why the Interior Department would have to go into seeing that we appropriate money in this subcommittee for agricultural purposes. It is a duplication of effort, in my opinion.

That is about all I have at this moment.

EMPLOYEES AT HOOVER DAM

Mr. BUDGE. Mr. Lineweaver, following Mr. Fenton's remarks, how many employees do you have now operating the Hoover Dam and its related facilities, such as the schools and so forth?

Mr. LINEWEAVER. We have on the Boulder Canyon project 288 employees as of December 31, 1952; and Boulder City municipal operations had 85, which includes street workers and mechanics and fire department, police department, and clerical services and everything of that kind.

Mr. BUDGE. It is my understanding that you do not distribute any of the power from Hoover Dam; is that correct?

Mr. LINEWEAVER. That is correct, except what is used right in the municipality.

Mr. BUDGE. Are all those 288 employees necessary to operate the dam?

Mr. LINEWEAVER. Some few of those are on construction. I will ask Mr. McPhail how he considers those 288 employees.

Mr. MCPHAIL. I believe they are, Mr. Budge. The operations of the Boulder Canyon project are divided among three agencies as now carried on. The city of Los Angeles, as an operating agent for allottees in the public group, operates the larger part of the generating equipment in the plant.

Mr. BUDGE. How many employees do they have, compared with your 288?

Mr. MCPHAIL. As I understand, somewhere in the neighborhod of 130 employees.

Mr. BUDGE. They operate the generating plant and distributing system?

Mr. MCPHAIL. They operate the larger part of the generating equipment within the plant and the control work and part of the switchyards. The private group operates in like manner with a lesser number of employees, but roughly in proportion.

The Bureau of Reclamation operates the dam, the outlet works, all the common facilities in the building, the Boulder City waterworks, the reservoir, and handles the security and tourist accommodations.

We have quite a group of guides that handle the tourists. We make a charge for conducting people through the plant, and that charge throughout the year very closely equals the cost of guide service. There are also a total of 13 guards for safety measures.

Mr. MCPHAIL. I would like to add this: We are becoming quite concerned, since the age of some of the equipment is now approaching 20 years, as to our ability to keep up the necessary preventive maintenance. We have about $165 million invested in that development. We would certainly like to insure that the maintenance is at the highest level and that every precaution is taken against any failure of any kind. Our forces, in our opinion, are getting awfully short to do a reasonably good job in carrying on a program of preventive maintenance.

Mr. MARKWELL. I would like to supplement Mr. McPhail's statement by saying we must have a guard service to protect this structure.

Mr. BUDGE. I think that is wise.

Mr. MARKWELL. A number of our guides who handle tourists also do guard duty. We always have people on guard duty 24 hours a day.

ARKANSAS, WHITE, AND RED RIVER SURVEY

Mr. BUDGE. Mr. Lineweaver, I notice you have an item in here for investigations, a portion of which is outside the 17 western reclamation

States, and you are suggesting new language to allow the Bureau, apparently, to continue investigations which have been in progress for some years. How far are you going on this program? You have $800,000 for investigations.

Mr. LINEWEAVER. I will ask Mr. McPhail or Mr. Dixon to take that.

Mr. DIXON. Mr. Budge, $330,000 is for Alaska. That is the Alaska investigation program——

Mr. BUDGE. I am not referring to that. I am referring to the item which appears on page 6, the next to the last paragraph, under the title "General investigations," and which refers to investigations in the Arkansas, White, and Red River Basins.

Mr. DIXON. I see where you got the $800,000. That figure is the estimate for the entire expenditure in the Arkansas, White, and Red River Basins, and only $100,000 of it would be for use in 3 Eastern States. Congress enacted legislation 3 years ago to make this investigation, covering the entire river basins of these 3 major streams. The President asked all the departments concerned to pool their experience and come up with what we call the AWR report, the Arkansas, White and Red River Basins report.

The irrigation portion of the work is naturally assigned to the Bureau of Reclamation to do, and last year this committee recommended and the Congress appropriated $50,000 for that work to be carried on. This year as we approach the completion of the field survey part of the job next year, we need $100,000 to continue the fieldwork.

Mr. BUDGE. As a matter of fact, you have been doing this work without congressional authorization, have you not?

Mr. DIXON. No. We had an appropriation for it last year.

Mr. BUDGE. But where is your authorization to go outside the 17 reclamation States?

Mr. DIXON. I have a statement on Bureau of Reclamation activities that I can submit for the record, together with a memorandum from the Chief Counsel on the point you raise.

Mr. BUDGE. Just tell me what act it is that authorizes you to operate outside the reclamation States.

Mr. DIXON. In the hearings last year, on pages 390 and 391, is a 2½ page printed statement covering that subject, and it refers to several acts. In addition, I have this Chief Counsel's letter, which again cites several acts. I think the best way to do it would be to read the whole memorandum or have the Chief Counsel do so.

Mr. BUDGE. Let us just put the memorandum in the record, please.

(The matter referred to follows:)

BUREAU OF RECLAMATION ACTIVITIES IN ARKANSAS, MISSOURI, AND LOUISIANA

For the fiscal year 1953, $50,000 was appropriated by the Congress to carry on investigations of the irrigation potentials in the States of Arkansas, Missouri, and Louisiana as a part of the overall AWRBIAC program. This statement outlines the progress to February 1, 1953, the work program for the balance of this fiscal year, and the program planned for 1954. The fiscal year 1954 program would entail the expenditure of an estimated $100,000 and would provide the information required for the AWRBIAC report which is scheduled for completion by June 30, 1954.

An organization consisting of an engineer in charge and five technical assistants was established at Little Rock in August 1952. The engineer in charge was given a directive to carry out the investigations under standard Bureau of

Reclamation procedures, with particular emphasis on the need for early determination of the benefits to be derived from furnishing an adequate surface water supply for the irrigation of rice and general crops such as cotton, corn, lespedeza, and soy beans. Early delineation of the additional lands suitable for rice irrigation, as well as those better suited to general cropping practices, was also a top priority assignment.

These investigations are being conducted with a view toward the best possible technical determination of the means of deriving maximum irrigation benefits at reasonable cost. Present studies are directed toward determination of the irrigation potentialities without regard to the limiting provisions of reclamation law which apply in the 17 Western States. The investigations include determination of the most economical way to obtain maximum irrigation benefits, whether it be by individual measures or by group enterprise.

The work was started in Arkansas and has not yet reached into Louisiana or Missouri. The Bureau is cooperating very closely with the Arkansas Resources and Development Commission, the University of Arkansas and with Federal agencies participating in AWR investigations. Land use maps prepared by the Soil Conservation Service are being used for land classification purposes, topographic maps of the Corps of Engineers are being used for engineering studies, along with other engineering and hydrologic data furnished by that agency, and economic data are being furnished and the resulting studies are being reviewed by personnel of the University of Arkansas.

To date about 3,500,000 acres of land have been classified as suitable for irrigation, of which 2,250,000 acres are suitable for rice irrigation, and 1,250,000 acres are suitable for general cropping practices, such as cotton, corn, lespedeza, and soybeans. Areas in Arkansas still to be classified include the Arkansas River and its tributaries above Little Rock and the Red River Basin and its tributaries.

Economic studies have been made which show that irrigation is highly beneficial to the general type of farming. The irrigation of rice has long been proven beneficial in Arkansas, and such irrigation, mainly from groundwater supplies, has been carried on for years. However, groundwater tables have been falling alarmingly and dependable supplies of surface water for irrigation need to be developed.

Preliminary engineering studies indicate one potential project of about 20,000 acres immediately west of Newport, Ark., and south of White River to be feasible. There is another potential project of about the same size lying west of Newport and north of White River. Both the projects can be adequately served by the present flows of White River without additional storage capacity or changes in existing storage releases. East of the White River, an area consisting of nearly 600,000 acres of land suitable for rice irrigation and 58,000 acres suitable for general crop production is located between Newport and the Missouri State line. This area can be served by three pump lifts from the Black River. Except for the first identified area, engineering studies have not progressed to the point to give an indication as to the feasibility of development. The engineering studies are programed for completion during the remainder of fiscal year 1953. Other lands included in the presently classified 3,500,000 acres in Arkansas lie south of Newport between the White River and the Mississippi, south of the Arkansas River to the Louisiana State line in what is locally called the delta area, and in the Illinois River Basin near Springdale.

The fiscal year 1953 program will include land classification of the Arkansas River and its tributaries above Little Rock and the Red River Basin and its tributaries, delineation of potential irrigation project areas, preliminary evaluation of potential irrigation benefits, and preliminary engineering studies to determine costs for all but the Red River Basin area.

Beginning in fiscal year 1954, investigation similar to those outlined above will be conducted for irrigation potentials in Louisiana, Missouri, and the Red River Basin in Arkansas. In addition, detailed economic and engineering studies of the potential project west of Newport, Ark., will be completed. This program will enable the Bureau to provide the AWRBIAC with preliminary findings as to desirable irrigation projects in all 3 States, as well as detailed feasibility data for 1 selected or pilot area. This should permit the committee to include in its report appropriate programs and recommendations for future irrigation development.

To accomplish the fiscal year 1954 program, the Little Rock office of the Bureau of Reclamation will need to be expanded to include field and office engineering personnel. It is also planned that the office would be organized as a regular area planning office with appropriate financial and administrative functions. This

will require the appropriation of the $100,000 requested in the current budget program now pending before the Congress.

Any operations of the Bureau in Arkansas, Missouri, and Louisiana beyond June 30, 1954, would be contingent on favorable findings resulting from the studies now programed, interest of the State and local people in the development of favorable projects by the Bureau, and obtaining of further investigations funds to complete detailed studies for such projects.

SEPTEMBER 12, 1952.

To: Commissioner.
From: Chief Counsel.
Subject: Authority of Bureau of Reclamation to perform work in Arkansas and Louisiana in connection with the Arkansas-Red-White River investigations.

In his memorandum of August 27 (subject: Information for Bureau of the Budget, fiscal year 1954), Mr. Lineweaver asked for a statement on the authority of the Bureau to perform work on the Arkansas-Red-White River investigations in Arkansas and Louisiana. The statement, I understand, is to be used in support of the Bureau's request for funds from the general fund of the Treasury to be included in the "General investigation" item in the 1954 Interior Department Appropriation Act. I believe that the material which follows will serve this purpose.

The moneys being requested will, I understand, be required in order to enable this Department to carry out, as directed by the President, its share of the investigation of the Arkansas-White-Red River Basins authorized by the Flood Control Act of 1950 and, in connection therewith, to perform the preliminary irrigation investigations called for prior to submission of reports to the Congress under section 8 of the Flood Control Act of 1944.

The Flood Control Act of 1950 authorized the Secretary of the Army to conduct an investigation of the Arkansas-Red-White River Basins with a view to "developing comprehensive, integrated plans of improvement for navigation, flood control, domestic and municipal water supplies, reclamation and irrigation, development and utilization of hydroelectric power, conservation of soil, forest and fish and wildlife resources, and other beneficial development and utilization of water resources including such consideration of recreation uses, salinity and sediment control, and pollution abatement as may be provided for under Federal policies and procedures, all to be coordinated with the Department of the Interior, the Department of Agriculture, the Federal Power Commission, other appropriate Federal agencies and with the States, * * *." Following this legislation, the President in letters of May 19, 1950, to several Federal departments and agencies, including the Department of the Interior, requested that the Federal agencies concerned organize an interagency committee to conduct the survey contemplated by the Flood Control Act of 1950 and to "formulate procedure and map out a joint plan of investigation, indicating specifically the precise responsibilities of each and the prospective allocation of agency resources of the joint effort."

The interagency committee requested by the President was established on June 12, 1930, by the Federal Inter-Agency River Basin Committee, held its initial meeting on July 25, 1950, and has been active since that date. In the organization of the studies for the joint agency investigations, the Department of the Interior, acting through the Bureau of Reclamation, was assigned the chairmanship of the irrigation and reclamation work group for the entire area of investigation including the States of Arkansas, Louisiana, and Missouri.

Section 8 of the Flood Control Act of 1944 which also, I believe, furnishes authority for the proposed work, reads, in part, as follows:

"Hereafter, whenever the Secretary of War determines upon recommendation by the Secretary of the Interior that any dam and reservoir project operated under the direction of the Secretary of War may be utilized for irrigation purposes, the Secretary of the Interior is authorized to construct, operate, and maintain, under the provisions of the Federal reclamation laws (act of June 17, 1902, 32 Stat. 388, and acts amendatory thereof or supplementary thereto), such additional works in connection therewith as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in said Federal reclamation laws and after subsequent specific authorization of the Congress by an authorization act; and, within the limits of the water users' repayment ability, such report may be predicated on the

allocation to irrigation of an appropriate portion of the cost of structures and facilities used for irrigation and for other purposes. Dams and reservoirs operated under the direction of the Secretary of War may be utilized hereafter for irrigation purposes only in conformity with the provisions of this section * * *."

The reference to the reclamation laws contained in this excerpt is, as I read it, a direction as to the manner in which the irrigation works covered by this section shall be constructed, operated, and maintained. It cannot be read as a limitation on the geographical area in which the Bureau may operate. So reading it would make the whole sentence in which it occurs superfluous since the Bureau already had, at the time this act became law, all the authority it needed to undertake investigations and to construct, operate, and maintain irrigation works in the 17 Western States. Our reading of the subsection is confirmed by the statement of Senator Overton, who was in charge of the bill which became the Flood Control Act of 1944, when he twice pointed out, in the course of debate on the bill, that section 8 "made not only the California projects [which were most in question then] but all such projects subject to irrigation laws" (90 Congressional Record 9264). (Emphasis added.)

I conclude, therefore, that there is ample authority under the Flood Control Acts of 1944 and 1950 for the Bureau of Reclamation to continue its work in connection with the general Arkansas-Red-White River investigations provided only, of course, that funds are appropriated for this work next year as they have already been appropriated for the present fiscal year.

EDWARD W. FISHER.

AUTHORITY OF THE BUREAU OF RECLAMATION TO WORK EAST OF THE 17 WESTERN STATES

(Excerpt from hearings on Interior Department appropriations for 1952 before the subcommittee of the Committee on Appropriations, House of Representatives, 82d Cong., 1st sess., pt. 1, pp. 390, 391.)

The Reclamation Act of 1902 (32 Stat. 388), as amended, provides for operations of the Bureau of Reclamation within the 17 Western States. In addition to that authority for that area, other authorities exist, the most important of which are shown in the following paragraphs.

Through a proper delegation of authority from the Secretary of the Interior under Reorganization Plan No. 3 of 1950, the Bureau of Reclamation would be authorized to do any and all works encompassed within the authority of the Secretary anywhere in the United States or elsewhere. For instance under the responsibility of the Secretary for marketing of surplus power generated at dams constructed and operated by the Corps of Engineers as contained in section 5 of the Flood Control Act of 1944 could be delegated to the Bureau of Reclamation for eastern as well as western areas of the country. Another example is found in section 8 of the Flood Control Act of 1944 (58 Stat. 807) which provides that "whenever the Secretary of War (now the Secretary of the Army) determines, upon recommendation by the Secretary of the Interior that any dam and reservoir project operated under the direction of the Secretary of War may be utilized for irrigation purposes, Secretary of the Interior is authorized to construct, operate, and maintain * * * such additional works in connection therewith as he may deem necessary for irrigation purposes." Here again, the assignment is specific in purpose, and without geographical limitation.

Under what is commonly referred to as the Contributed Funds Act (43 U. S. C. 395), the Bureau is authorized to accept funds from States, municipalities, and private interests, and to expend these funds "for investigations, surveys, construction works, or any other development work incident thereto involving operations similar to those provided for by the reclamation law * * *" this authority has been used to make irrigation investigations in Hawaii and elsewhere.

Section 601 of the Economy Act of June 30, 1932 (31 U. S. C. 686) authorizes the transfer by any Federal agency to any other Federal agency of moneys which are available to the transferring agency for work which the agency to which the money is transferred is equipped to do, and which cannot be done as conveniently or more cheaply by private bidders. The purpose of this section is to permit one Federal agency to utilize the services of another Federal agency to perform services when the serving agency is as well or better qualified to do so, through transfer of funds for that purpose. Funds transferred under the Economy Act do retain the character of the original appropriation as the Economy Act of itself conveys no new legislative authority to the receiving agency. The basic authority in the instant case is the Flood Control Act of 1944.

There are numerous and continuing instances when the Bureau of Reclamation and other agencies utilize this act to the advantage and economy of the Federal Government. For example, each year the Bureau transfers funds or reimburses the Geological Survey for work done in performing stream gaging and/or collecting ground-water data for use in planning potential reclamation projects, because the Geological Survey is better equipped to do this work. In fiscal year 1950 some $162,000 of general investigations funds were transferred to the Geological Survey for such work. In fiscal year 1951, it is estimated that $164,000 of general investigations funds will be made available by the Bureau for these same purposes. Funds, similarly, are transferred each year to the Weather Bureau, Department of Agriculture, and other agencies for investigations work relating to the reclamation program in which those agencies have particular proficiencies. Similarly, the Bureau performs services in its fields of proficiencies for other agencies. Illustrations are that at the request of the Department of the Navy, the Bureau is now making irrigation investigations in the Ryukus Islands and about a year ago did similar work in Guam. At the request of the Tennessee Valley Authority, the Bureau did the designs for Norris Dam. At the request of the Panama Canal, the Bureau did technical work on Madden Dam. At the request of the International Boundary and Water Commission and the State Department, the Bureau is designing Falcon Dam.

Under this statute, the Bureau of Reclamation, upon a transfer of funds from, say, the Secretary of the Army, would be authorized to undertake in Arkansas, or elsewhere, any work such as investigations or construction of irrigation works which it is equipped to perform.

The above comprise the principal statutory authorities under which the Bureau of Reclamation may conduct investigations and construct works outside of the 17 Western States. Under the Federal interagency study now under way for the Arkansas, White, and Red River Basins, the Bureau of Reclamation will have primary responsibility for irrigation study, which is its field of proficiency, throughout the entire area covered by the investigations, and money for Bureau of Reclamation irrigation investigations in those areas east of the 17 Western States will be made available by transfer from the Corps of Engineers. This is evidenced by the following excerpt from letter of September 15, 1950, from Colonel Prentiss, chairman, Arkansas-White-Red River Basin Interagency Committee, to Major General Pick, chairman, Federal Interagency River Basin Committee:

"It was agreed finally that recognizing that the technical skills and experience of the Bureau of Reclamation would be utilized to insure constistency in the comprehensive study, that a sufficient amount should be included in the estimate of the Corps of Engineers to cover all irrigation studies needed in the three-State area (Missouri, Arkansas, Louisiana), also that in making such studies, the cost of services provided to the Corps of Engineers by the Bureau of Reclamation making available technical skills and experience would be reimbursed by transfer of funds from the Corps of Engineers to the Bureau of Reclamation."

Accordingly, it is the intention of the Bureau of Reclamation to conduct, insofar as funds will permit, full investigation of all irrigation development possibilities in the Arkansas-White-Red River Basins. If the investigations so warrant, it is expected that definite proposals for irrigation improvements and developments may be forthcomng from these investigations.

Mr. BUDGE. How much money did you spend in fiscal 1953 in these 3 States which are outside the reclamation States?

Mr. DIXON. The appropriation was $50,000. I will ask Mr. Golze if he knows the proportion spent to date. It would be over half of that, I think.

Mr. GOLZÉ. We can supply that for the record.

(The information requested is as follows:)

Of the $50,000 appropriated in fiscal year 1953 from the general fund for investigations in the States of Arkansas, Louisiana, and Missouri $27,173 was obligated as of February 28, 1953.

Mr. BUDGE. If this committee adopts the language which you propose, we are in effect amending the Reclamation Act of 1902 and extending the area, and I rather think any such language would be subject to a point of order as being legislation in an appropriation bill.

Mr. DIXON. There are several acts that pertain to it, including the Reorganization Act, sections 1 and 8 of the Flood Control Act of 1944, the Donations Act—I forget the correct title of that act—and the Economy Act. The responsibility is with the Secretary, and the Secretary can operate in any State in the country.

Mr. BUDGE. But that is not true of the Bureau of Reclamation, is it?

Mr. DIXSON. Yes. Under the Reorganization Act, I understand that if an assignment is given to the Secretary of the Interior, he can assign it to any one of his agencies to do. He carries the responsibility and uses the one of his agencies that is technically the best qualified to do the task.

About four-fifths of the AWR area of the total investigation is in the 17 Western States, 20 percent of the area is in the Eastern States. It is economy and good business to use the Bureau that is technically qualified and familiar with reclamation practices for these investigations.

Mr. BUDGE. Of course, there are some basic limitations in the Reclamation Act, under which we have been living for 51 years, that should be considered. In your advance planning we had witnesses before the committee recently requesting two items on the same project. One was $2 million for construction funds, and the other was $350,000 for advance planning in fiscal 1954. How would those two fit together?

Mr. LINEWEAVER. What project?

Mr. BUDGE. Canadian River project in Texas.

Mr. DIXON. That is not included in this budget. I did not know of the request for $2 million. It would be quite possible to have both activities going on at the same time. The investigations continue on the part of the project that is not under construction. That is standard practice. The Columbia basin project is an example of that. The detailed investigations still continue on a part of the project, although Grand Coulee Dam is completed, and some lands are already under irrigation.

Mr. BUDGE. In line with Mr. Lineweaver's remarks that inadequate planning resulted in waste, it would appear to me a little premature to consider construction costs of $2 million when we need to spend $350,000 for additional advance planning.

On overall advance planning and investigations, I note there are charts of the various regions commencing after page 65 of the justifications. Does this mean that, if a request is made for investigation of a project not included in those charts, the Bureau would not be in a position to make even a preliminary investigation?

Mr. DIXON. No. We could adjust the program slightly. We feel a moral obligation to this committee to lay out the program as we see it today. Situations in some areas of course, may change before the House and the Senate vote on the bill, or at any time during the year. We may run into a legal or political situation that will slow up or stop a particular investigation, and the funds will be used in some other area. That is an occupational hazard inherent in this type of work.

Mr. BUDGE. It is not intended to foreclose investigations of what would appear on the face to be worthy projects?

Mr. DIXON. No.

Mr. BUDGE. Mr. Lineweaver, we hear a good many complaints from Members of Congress with relation to the withdrawal lands, and a great many Members feel consideration should be given to restoring a lot of those withdrawn lands to the public domain, particularly where the Bureau does not have any plans for their development. Is the Bureau giving consideration to that?

Mr. LINEWEAVER. Yes, Mr. Budge; we are constantly reexamining the areas of withdrawn lands, and almost every day there is a recommendation that goes to the Bureau of Land Management with respect to restorations. I know the type of complaints that you receive, because we get the same thing. But we have to take up each area separately and make the examination and look into the future—not necessarily a crystal-ball proposition but as to the program.

It is quite true that in some areas—take in your State, for instance—the program has gone much slower than the people would want it to go, and that has created a situation over which we have no control. But we are constantly examining the proposition, because I think we are all in agreement that we should not hoard reclamation withdrawals just simply on what may be a gleam in the eye on the part of some of us for something that will happen many years in the future.

Mr. BUDGE. To give you a concrete example, we had the Minidoka pumping project in my district. The original reclamation withdrawal was greater than now contemplated in the Bureau plans. Why should not the land which was withdrawn and which is not now embraced in the Bureau's plans be restored to the public domain?

Mr. LINEWEAVER. I would like to comment on that briefly, because there are several other factors involved in that situation, which include the underground-water situation as well as a possible examination of the character of the land and other factors. I think I can say this: that when this north-side pumping proposition gets set, and there is determined the character of the underground-water supply which is vital to the reclamation development——

Mr. BUDGE. I can anticipate what you will say: that you want to retain that land to determine what the underground water is, but in your justification for the project this year you have a statement from the Geological Survey to the effect there is no longer any question that the water is available.

Mr. LINEWEAVER. I am not enough of an underground-water specialist to make the positive assurance to the committee that that is the final report on the part of the Geological Survey.

Mr. BUDGE. You have adopted it as your justification for the project.

Mr. LINEWEAVER. That is true for this area, but I can foresee that a tremendous drain in the area around it might have some effect on the project area if this reclamation withdrawal were abandoned.

Mr. BUDGE. Of course, we both know that is going on right now, but there are a great many situations all over the West where the Bureau has made reclamation withdrawals, a number of which are powersite withdrawals, where the Bureau now has no plans for construction. It seems to me we should consider getting those back in the public domain so they can be open for entry, and get away from

the housekeeping and landlord functions which the Bureau has to do with lands on which they have no planning in the future.

Mr. LINEWEAVER. I think there is a great deal to what you say. One problem that some of us inherited was finding out exactly what was withdrawn in a great many areas; in the Colorado River Basin, for instance. But that is a matter we think we have licked to a certain extent, and I can assure you that we will proceed with the examination of these areas with the view to releasing and restoring to the public domain any areas or any withdrawn lands that are outside of development in connection with reclamation projects. That involves not only our plan, but ideas that the States might have as to what the program should be in the future. It is not something that the Bureau or the Department should come to a decision on how to proceed.

Mr. BUDGE. Of course the States and private individuals interested in homesteading are foreclosed as long as that situation exists.

Mr. LINEWEAVER. That is right.

Mr. BUDGE. And I am sure a great many Members of Congress would appreciate it if the Bureau would proceed with a program to restore to public domain all lands where the Bureau has no plans for their development.

Mr. LINEWEAVER. We are proceeding with that investigation, together with the Bureau of Land Management and other agencies of the Department, and we will particularly look at the North Side Minidoka area.

Mr. BUDGE. Where the Bureau has no plans, we should start to look to other developments.

NEED FOR RECLAMATION PROGRAM

Mr. KIRWAN. You say in your remarks:

> The 1954 program will not begin to meet existing needs—much less those that will result from an emergency defense program—for power, for municipal and industrial water, and for irrigation.

Just what do you mean by that?

Mr. LINEWEAVER. We mean that this program is not what the Bureau and the Department felt was justified by the existing economic requirements. However, we are supporting the recommendations that have been made to the committee, and it was all adjusted to meet the budgetary requirements of the overall Federal Government.

Mr. KIRWAN. And you think, and the rest of you think—and rightly so, that there is a great need out there for power and water for municipal use and irrigation?

Mr. LINEWEAVER. Yes, sir.

Mr. KIRWAN. Much more need than we are responding to?

Mr. LINEWEAVER. That is true. I think the record shows that. I will be glad to submit for the record——

Mr. KIRWAN. Put a statement in along that line.

Mr. LINEWEAVER. Yes, sir.

(The information requested follows.)

NEED AND DEMAND FOR CONTINUATION OF THE RECLAMATION PROGRAM

The development of the resources of the West for irrigation is short of the halfway mark. Only a good start has been made on hydroelectric power development. Varying degrees of progress have been made in the accomplishment of

objectives such as flood control, sediment control, recreation, fish and wildlife preservation and propagation, and pollution abatement. During the first few decades of water development in the West, the inexpensive and easily developed projects were almost completely exhausted, largely by privately financed development. The remaining potentials are, in the main long-range basinwide developments of exceeding complexity which only the Federal Government has the ability to finance.

The needs for planning are critical throughout the West. There is constant demand from local and State interests throughout the West to undertake construction and to continue investigations in progress or to initiate new investigations of potential projects because despite advances made, economic developments in the West have failed to keep up with the population increases during and since World War II. Population increases in the West far beyond the growth anticipated a decade ago are straining power and municipal water supplies, and local food production in the West is unable to keep up with the increases in population because of lack of sufficient developed irrigation water supplies. Supplemental irrigation water is needed in many areas for irrigated lands which are only partially productive because of limited water supplies. So emphasis in the Bureau of Reclamation's program is placed on those projects which could contribute to the maintenance of the essential civilian economy by providing hydroelectric power, municipal water, supplemental irrigation water, and other services in critical areas.

The 6 Far Western States—Washington, Oregon, California, Idaho, Utah, and Arizona—have individually gained from 25 to 53 percent in population since 1940, while the largest gains east of the Mississippi have been about 15 percent. The existence of these large populations in relatively undeveloped areas requires new farm production, as well as industrial production in nearby locations.

The population of California increased from 6,900,000 in 1940 to 10,586,000 in 1950 making the State the second largest in population in the Nation (according to recent estimates developed by the California Taxpayers' Association, the State's January 1952 population has increased to about 11,237,000). The demand for agricultural products within the State has resulted in a material increase in irrigated acreage during recent years which has overtaxed water supplies that were inadequate even to meet on a sustained basis the demands of a decade ago. Overpumping of groundwater supplies in the southern San Joaquin Valley is proceeding at a much greater rate than in previous years, with a result that water levels are lowering rapidly.

The demand for water is not confined to the Central Valley. The present supplies of practically all of the Pacific coastal streams from San Diego northward to San Francisco Bay are being overdrawn and the local residents are looking for ways to obtain additional water, and demands for water in the Klamath River Basin and neighboring basins are also increasing.

The increased use of power in California during the war years has not only been maintained but has continued to increase, so that the need for power is even more critical than the need for water. This has strained the capacity of the present power facilities in the area, with the result that in early 1948, during a brief period, power use had to be severely curtailed. Increased industrial production to meet the accelerated activities resulting from the current national defense may be limited in California by the shortage of power generating facilities, and power shortage conditions could recur unless additional power facilities are constructed at a rapid rate during the next few years.

The population of the Pacific Northwest increased from some 3,520,000 in 1940 to 4,670,000 in 1950. This is an increase of about 33 percent, contrasted to a 14-percent increase in the last decade for the United States as a whole. The existence of these large populations in a relatively undeveloped area requires significant new farm production, as well as industrial development.

Economic development in the Pacific Northwest during the postwar years has failed to match population increases. Despite substantial industrial expansion within the last 10 years, the region is still one where commerce is characterized by in-shipment of manufactured goods and out-shipment of bulk commodities. When carriers are loaded to capacity with military traffic, transportation of food and manufactured items over long hauls to the Pacific Northwest in order to satisfy domestic regional requirements contributes to a difficult transportation situation.

Not enough agricultural commodities are produced in the Pacific Northwest to satisfy its own requirements, much less to contribute to the food and fiber com-

modities needed for shipment to Pacific war areas. Greatly increased population, together with prospective retirement of some submarginal lands now farmed, indicates the need of adding hundreds of thousands of acres to the present cropland in the region during the next decade. Almost all of this expansion will have to be in the form of new irrigated lands.

The President's Materials Policy Commission, in its report to the President in June 1952, recognized the well-known fact that hydroelectric power has the advantage of being based on an inexhaustible source of energy. Decidedly one of the most important and attractive hydroelectric areas remaining to be developed in the United States is the Pacific Northwest. The Columbia River and its tributaries have a large volume of water flowing approximately 1,200 miles from sources in the American and Canadian Rocky Mountains and dropping as much as 3,000 to 6,000 feet to the ocean. The Columbia runs at flood in summer when the snow on the mountains is melting. Since the snow melts gradually, the river varies less in flow than most other American rivers, but, nevertheless, still requires a great deal of conservation storage.

In spite of recent strides in development of hydroelectric power the Pacific Northwest has faced, and will continue to face, a severe energy shortage even for a continued peacetime economy which has caused severe restrictions in industrial development. On this basis alone, the Pacific Northwest will be seriously weak where it needs to be strong if war should come with its tremendous energy requirements.

Although Utah experienced an outward movement of its residents from 1920 to 1940 in search of economic opportunities, World War II reversed this trend. The densely settled agricultural lands in the existing irrigation developments in Utah are held in blocks to small for further subdivision to provide room for the expanding population. There is urgent need for the development of supplemental irrigation water supplies for areas already cultivated, but having deficient supplies. The State also has vast mineral resources, the development of which awaits low-cost electrical power. Even with the most optimistic plans of development that the Bureau of Reclamation has for the Colorado River Basin and Great Basin power market areas in the proposed Colorado River storage project, a shortage will exist in 1970 between anticipated peak demands and net assured capacity in this region. Thus it is clear that one of the most important factors delaying the economic development of Utah is lack of progress in the full utilization of the available water resources.

Vital petroleum deposits have been discovered and are being developed in the intermountain region. Development of the region's vast and rich deposits of oil-bearing shales is getting under way. Uranium ores are being mined and phosphate and other mineral deposits are inviting exploitation. These developments have created demands for more food, more water, more power, and more of the many incidental benefits that result from water resource development.

In the central Arizona area water now being pumped from underground sources exceeds annual recharge by about a half-million acre-feet. The depth to groundwater is increasing, costs for pumping consequently increase, and the ultimate outcome of overuse of all supplies beyond present safe yields will be that this area will lose the equivalent of about one-third of its agricultural potential.

Presently developed hydroelectric power likewise has not kept pace with the regional demands arising from industrial use, irrigation pumping, and the power needs of a greater population in the Southwest.

Runoff in the Southwest has been exceptionally poor in recent years, particularly in the Rio Grande Basin, where actual drought conditions are experienced. This dry period occurring in an area dependent to a preponderant degree on irrigated agriculture and lacking adequate water storage facilities is a serious threat to the economy of the region.

The importance of water and power to the economy of the region was brought into sharp focus by the drought which caused a severe water shortage in fiscal year 1952. The only Bureau power plant in this region at Elephant Butte Dam was shut down for approximately 8 months due to the water shortage. The irrigators on the Rio Grande project installed many wells during the past year in order to supplement water supplied from the Bureau storage facilities. Strict rationing of water used for certain purposes was necessary in some communities during the summer months.

Water shortages are being experienced on the eastern slope in Colorado. The only potential projects which could provide water to meet these shortages of irrigation, municipal, and industrial water are diversions from the upper Colorado River Basin which would also provide large blocks of power. However,

completion of plans for these diversions depend on development of plans for use of water on the western slope within the natural basin of the Colorado River which compete with or limit the use of water for diversions.

Irrigation development is sorely needed in the plains area of Colorado, Kansas, Oklahoma, and Texas, as well as in the northern Great Plains area which is included in the authorized Missouri River Basin project. There the present-day inhabitants are faced in their farming front with the serious problem of erratic rainfall. Dry-farming crop failures are so common that the following of such practices over a long period becomes a hazardous venture. Also, in dry years, the livestock industry suffers because of poor range conditions and the deficiency in feed to supply a maintenance ration. An adequate water supply, such as could be provided for irrigation, is the only means whereby full productivity of irrigable land can be achieved. Since the returns from irrigation of general farm crops in the semiarid and subhumid zones are small in comparison with costs thereof, and as few possibilities exist in the region for the subsidization of irrigation projects through the assignment of power revenues, the investigation program in the region has to date resulted in only a few favorable reports on authorized projects.

In past decades, the Texas economy was relatively simple and largely agricultural. During this period, which was generally one of national abundance of agricultural production, Texas was primarily a producer of raw materials which were processed into finished products elsewhere. Under such circumstances, water requirements were relatively small, and the problem of water supply was not especially critical. Over the past decade, changes and increases in national wants have been reflected by a change in the relative importance of Texas water problems which are occurring at an accelerating rate as water demands for production of goods steadily mount.

First, portions of the State are rapidly converting from agricultural to an industrial economy. The rapid rise of industry with its attendant population increase creates water demands heretofore considered improbable. In 1940, petroleum refining was the major industrial water use in Texas, but required less than 100,000 acre-feet annually. Today the amount of crude petroleum refined is 160 percent of the amount refined in 1940. In addition, a whole new industry engaged in manufacturing plastics, synthetic rubber, and other products using chemicals obtained from petroleum, natural gas, and sulfur gas has been established in Texas and developed to major proportions. Other large water using industries have been established or greatly expanded in recent years. As a result, the annual industrial water use in Texas at present is estimated at 4 times the 1940 consumption.

Second, the State has a large and growing national outlet for increased agricultural production. Irrigation has been expanding, mainly by pumping from ground water. But ground water resources are being overdrawn rapidly.

Recent studies of rice irrigation and specialty crop irrigation indicate the justification of extension programs of water conservation and land development in the Gulf Basin in Texas. Also, estimates of the bureau of business research of the University of Texas indicate that new industrial production requiring large quantities of water will take place on the Texas gulf coast if such water supplies are provided. The possibility of expanding reclamation into these new areas would require very careful study in the planning, particularly in the consideration of the economic phases of the development.

The needs for reclamation development are critical throughout the West and Alaska, but the Bureau's construction program has been quite small in comparison to the needs. In the Pacific Northwest the Bureau's current construction program for development of water and related resources consists almost entirely of the Palisades project and the irrigation features of the Columbia Basin project. The construction of Hungry Horse Dam is nearing completion. Aside from these, the Bureau has no authorized projects other than the relatively small Kennewick Division of the Yakima project and portions of the Minidoka project. In California the initial features of the Central Valley project are practically completed, and construction is continuing on the Folsom power plant and is being initiated on the small Sly Park unit. In this area only the Sacramento canals unit and Trinity River Division of the Central Valley project, and the Solano project remain authorized for construction. In the entire Colorado River and inland basins the Weber Basin project and some very small items are under construction, and only the Deer Creek power plant and Collbran project are authorized for construction. In the Southwest, which also is practically without a construction program, the only projects eligible for construction without au-

thorization or reauthorization are the Middle Rio Grande and the Canadian River projects, and even on these authorized projects considerable additional advance planning remains to be done. In Alaska only the Eklutna project is under construction, and no other projects are authorized for construction.

The present construction program not only is inadequate, but the Bureau of Reclamation does not have either a widespread backlog of authorized projects or a backlog of unauthorized projects which are ready to go into construction. Lack of an adequate investigation program has been resulting in completion of authorized work three times as fast as new work is being authorized. Unless an adequate investigation program is established the present rate of progress in the West will slow down or dry up, or projects are apt to become authorized upon the basis of less adequate data. Under these conditions, a backlog of unauthorized projects does not ever develop, for the need is to start the new projects as soon as the plans are drawn. This is uneconomic, and does not allow the Congress to select from among alternative proposals.

Thus, it is clear that the investigations program has barely been keeping ahead of the present reduced construction program, and any curtailment of the investigations program is sure to have adverse repercussions in the character and size of the future construction programs which are of such great importance in the development of water and related resources of the West and Alaska.

In summary, new irrigation development in the West has not kept pace with the demand for agricultural products, even though vast potentialities for further development exist. Many of the projects under investigation involve the provision of supplemental water supplies for presently irrigated lands only partially productive because of chronic water shortages. Authorization and construction of such supplemental water projects will alleviate financial hardships now suffered by many farmers and thus strengthen present weaknesses in the economy of the region.

Population increases in the West far beyond the growth anticipated a decade ago have overtaxed the present municipal water supplies of many communities. In certain areas only the above average precipitation occurring during this period has prevented critical water shortages. In other areas drought conditions actually prevail, and surface water and ground water supplies are diminishing rapidly. Municipal and industrial expansion in certain areas has been accompanied by a corresponding decrease in irrigation because of the pressing demands on lagging water resource development for municipal and industrial uses.

Along with the rapid industrial expansion and population growth resulting from development of the West's natural resources, many of which are strategic for national defense, there is a corresponding increase in demands for electric power. Many areas are feeling the pinch of inadequate power supply for domestic and commercial uses. Aside from the impetus given to the development of minerals and other basic resources, abundant, low-cost power contributes directly to our basic economic strength. It becomes of extreme importance that further increases in the use of oil and natural gas in new fuel-electric generating stations be held to a minimum and that the expanding needs for additional generating capacity be met through the development of hydroelectric power projects wherever practicable.

There is a constant demand from local and State interests throughout the West to continue construction of reclamation projects already under construction and to initiate construction of authorized projects. There is a great demand to continue investigations in progress or to initiate new investigations. The number of investigations included in the general investigations program has been very large because of the great need and widespread demand for these investigations. This demand is inevitable because water is the most valuable single natural resource of the arid and semiarid West. The entire reclamation program lagged during World War II because of the necessity for the Nation to concentrate on the war effort. Since the war, despite advances made, economic developments in the West have failed to keep up with the population increases.

This general situation makes it desirable that the reclamation construction program proceed at the maximum rate consistent with the overall budgetary requirements of the Nation. It is just as important that an orderly flow of recommendations for authorization of new irrigation projects be made by the Bureau of Reclamation, the responsible Federal agency for western water resource development. In order to meet the growing water needs in the West, it is necessary to complete the investigations of potential works as rapidly as possible, so that an orderly flow of recommendations for the authorization of

new projects can be initiated in time to meet the situation which has developed and which will become more serious as time passes. It is in the public interest that these vital resource developments be carefully investigated and wisely planned in advance of construction. The need for new development of water and power supplies is so great that it is certain that projects will be authorized and placed under construction whether adequate investigations have been made or not. When new projects are undertaken without adequate investigations, losses always result from false starts and inadequate plans.

Administration of Boulder City

Mr. Kirwan. Dr. Fenton took up something which I think should have been done many years ago, separating the municipality of Boulder City from the Government. Whose fault is that? Is that the fault of Congress?

Mr. Lineweaver. No: I do not think so, Mr. Kirwan. It is one of those things that has grown up, and it represents a departure from established practice since Boulder City was established in the early thirties, and it is pretty difficult to wean people who come in there away from the idea that the Federal Government ought to provide them support as well as subsidize them. That is the main problem, and I will say that extends also to employees of the Bureau of Reclamation, who constitute a considerable part of the population of Boulder City. They have had fairly low rents; they have had other conveniences there; and I may say that this committee will hear about the complaints because we have raised the rents under the general policy of the Government as enunciated by the Bureau of the Budget. No doubt there will be repercussions reaching the floor of Congress regarding that. We have been subjected to very severe criticism for putting into effect a new rental rate on Government housing, not only at Boulder City but at Coulee Dam and every place else.

Mr. Kirwan. Did you put it into effect, or was it an act of Congress that put it into effect?

Mr. Lineweaver. It was done by direction of Congress. Congress did not prescribe the exact rules and regulations under which it should be done, but it did prescribe that there should be something done to curb subsidizing Government housing, housing constructed and used by Government employees. That applies not only to the Bureau of Reclamation but the Atomic Energy Commission and all other agencies.

Mr. Kirwan. All of them.

Mr. Lineweaver. That is right. I think it would be well to call attention to this fact: Government housing has been and is necessary in remote areas where accommodations do not exist, and we have to build housing in order to get the type of people we want in remote areas for construction and operation and maintenance.

Mr. Kirwan. I think now, from looking at Boulder City, which is a beautiful city, it is about time we separate the municipality from the Government, and we have had 20 years to do it.

I might make this observation: A couple years ago I was coming back from Panama, and three families had their goods on the boat. They had severed their connections with the Government in Panama and were coming back to the States. They found out I was a Congressman, and they came to me with their complaints. I said, "When you get back to the States you will find conditions are not as good as in Panama." They denounced me, and denounced me in the press.

I met the Governor of Panama about a year later, and he invited me down. I told him about the incident. He said those three families never unpacked their goods. After they got up here and found conditions as they were, they went back to Panama and got on their knees and said, "If you take us back to work, you are looking at the three best workmen you ever had."

When I look at Boulder City, I am beginning to think I have been cheated on my side of the payroll. That is why I would like to see something done.

Mr. LINEWEAVER. I can assure you that we are endeavoring to expedite this legislation that will accomplish just what Dr. Fenton mentioned.

Mr. KIRWAN. That is, legislation from the Congress?

Mr. LINEWEAVER. Yes, sir. We have to get it up to Congress first.

Mr. KIRWAN. That is why I asked whether Congress is at fault.

Mr. LINEWEAVER. No, sir; they are not yet, because Congress has not yet had a crack at the legislation. However, we have been working on it, and we have had some people in this week from the field and we hope to close that up and get it before Governor Aandahl and the Secretary, and within a very short time to get it to the Bureau of the Budget and over here with it certainly before this session ends.

RENTAL RATES

Mr. JENSEN. Mr. Lineweaver, we have records which show very conclusively what the average people who do not work for the Government pay for rents. We know what average rental a person with an income of $4,000 a year will pay. We know what average rental is paid by people with incomes of $6,000, $8,000, or $10,000 a year.

Now, I think for the time being, until we can do some legislating, that this committee would be justified again in reiterating our position regarding rentals in a place like Boulder City by simply saying that the rents charged Federal employees in Boulder City shall be commensurate with the rent which the average person pays who is not an employee of the Government, in accordance with the salary which is received by the private person and the salary which is received by the Government employee.

Now, if that were done, and as I said before it is very easy to get the information as to what the private individual pays in the different income brackets, that would be a yardstick which could be followed by the Bureau of Reclamation in establishing rents in Government-owned buildings under the jurisdiction of the Bureau of Reclamation.

Mr. LINEWEAVER. Mr. Chairman, may I submit for the record a summary of the revised rental rates on the housing under the Bureau's jurisdiction. I think it would be informative. I do not know precisely how it compares with the salary proposition, but it is based on comparable housing in comparable areas. That has been the criterion probably more than salary, and it probably works out somewhat along the basis you suggest. I would like to submit that for the record to show that we have proceeded with this in trying to work out this problem. If it meets with your approval I think we would like to submit it for the record.

Mr. JENSEN. Without objection, I am sure we would be glad to have that statement in the record.

(The matter referred to follows:)

REVISED RENTAL RATE SCHEDULES FOR BUREAU OF RECLAMATION EMPLOYEE HOUSING

The Congress, in section 1413 of the Supplemental Appropriation Act, 1953, required all executive agencies of the Government to fix the rental rates for their employee housing in accordance with Bureau of the Budget Circular A–45, Revised, dated June 3, 1952. The effect of the regulation is to insure that Government employees pay as litle or as much for their Government housing as private employees pay for their housing in the same community and this result has been obtained by the Bureau. The regulation permits, in certain cases, limitation of rental to 20 percent of the employees' salary. This is the only consideration of the occupant's income permitted.

In accordance with this direction from Congress, with the Bureau of the Budget circular, and with the implementing order 2681 of the Secretary of the Interior, this Bureau began at once to revise the rental rate schedules on its approximately 5,000 housing units in the continental United States. Each of our seven regional directors was instructed to set up regional quarters evaluation boards which, working with local boards, local real estate men, appraisers, and other representative members of the local communities, ascertained the local scale of rental rates charged by private landlords for each type of housing. This was largely a factfinding operation, although naturally some element of personal judgment was involved, since a great deal of our housing is inferior to most smalltown housing in the West, and a fair basis for comparison had to be established.

Once the comparative private rental rates were known, our regional directors, in keeping with the decentralized nature of our operations, were authorized to determine the exact rates our own housing should bear and to place them into effect. Where the increases were found to be so great as to constitute a hardship for employees to shoulder at one time, as at Boulder City and Coulee Dam, the raises will be applied on a graduated scale until the full rate is being collected. All new rental rate schedules were announced effective November 1, 1952, most being collected in full at once, and some on a graduated basis as mentioned above. In two major instances, however, the immediate application of the new rates was temporarily delayed. In one instance the increases were so large and employee reaction so strong that the regional director, with the permission of the Commissioner, appointed a board of professional real estate appraisers drawn from representative communities in the area to review the findings of the regional quarters evaluation board. Their review resulted in an almost complete endorsement of the proposed rates, which were then confirmed and are now in effect. In the other instance, a review by the Commissioner's office of the proposed rental rates led to a determination that fully comparable rates had not been achieved. Procedural difficulties then were resolved and a revised new rental rate schedule is being applied.

Notwithstanding a notable rise in our rental rates, which amounted to an increase of 24 percent over the old rates and will be even higher when all new rates are fully effective, the Bureau will realize less gross income in the coming years from rents, since we are proceeding to dispose of employee housing to the greatest extent possible.

The following shows rental rate increases under circular A–45, revised, on typical projects:

Project or unit	Annual old rate	Annual new rate	Percent increase
Boulder Canyon	$88,572	$218,920	147
Coulee Dam	230,491	325,689	41
Shasta Dam	36,496	51,444	40
Canyon Ferry	26,640	28,150	6
Hungry Horse	82,833	103,632	25

Rental rate increases under circular A–45, revised, on typical quarters are indicated by the following:

House	Old monthly rate	New monthly rate
2 bedroom, frame, stucco (Boulder Canyon)	$25.00	$80.00
2 bedroom, frame, temporary (Boulder Canyon)	16.00	40.00
3 bedroom, permanent, brick (Boulder Canyon)	42.00	110.00
2 bedroom, prefabricated, frame (Hungry Horse)	18.96	28.00
2 bedroom, permanent (Hungry Horse)	38.00	50.50
1 bedroom, frame (Coulee Dam)	27.25	36.50
2 bedroom, frame (Coulee Dam)	26.40	48.50
4 bedroom, frame, temporary (Coulee Dam)	37.00	79.50
3 bedroom, frame (Shasta Dam)	51.50	72.50
2 bedroom, frame (Shasta Dam)	45.50	61.00
1 bedroom, frame, Duplex (Shasta Dam)	21.50	37.50
2 bedroom, frame (Canyon Ferry)	38.46	57.00
1 bedroom, frame, apartment (Canyon Ferry)	32.50	49.00

Cooperative Program With the Department of Agriculture

Mr. Jensen. We have some folks here from the Department of Agriculture who will speak on this item of $800,000 for transfer from the Interior Department to the Department of Agriculture for certain functions.

Regarding this item under "Operation and maintenance," under the heading "Insertion of language pertaining to transfer of funds to Department of Agriculture," it states:

> The purpose of the proposed new language is to authorize the Bureau of Reclamation to transfer such sums that may be necessary, not exceeding $800,000, to the Department of Agriculture to finance certain services to be performed by that Department for farmers on reclamation projects.

Mr. Jensen. You are Mr. George Clyde?

Mr. Clyde. That is right.

Mr. Jensen. What is your capacity in the Department of Agriculture?

Mr. Clyde. I am Chief of the Division of Irrigation Research, Soil Conservation Service.

Mr. Jensen. All right; you may proceed. I presume you have a statement that you wish to make either written or orally.

Mr. Clyde. I have an oral statement, Mr. Chairman. I was requested by Dr. Salter, Chief of the Service, to come over here to present this oral statement in support of this item.

It has to do with the research and the technical guidance which is to be offered to settlers on these reclamation projects.

Now, the item of "Research" has to do primarily with the irrigation, water application to, and the disposal of water from these lands in reclamation projects.

It involves the question of determining the irrigation water requirements developing from this water application, and the methods of disposing of the excesses which are applied to those lands as part of the irrigation process.

Of course, the objective of this work is to provide ultimately the technical guidance to farmers which is necessary to their full and complete utilization of these resources.

For example, these projects are designed for specific total water use. Water is delivered to the farm under the program of the Bureau of Reclamation. The farmer picks it up at that point and applies it

to the land. From that point on it is the water use and disposal which is covered under this proposed research. The objective of this research, as I said before, is to establish the methods which the farmer can use under his given site conditions to make water applications efficiently to provide uniform distribution of the moisture in the soil, to apply water with minimum erosion of the soil, minimum surface runoff from the land, minimum deep percolation losses and minimum costs.

Now, this farmer has to do this under the conditions which he has at his disposal, particularly with respect to topography and soil.

The basic information that is necessary to establish these methods has to do with climate, which determines to a great degree the rate at which the plants extract the moisture, the irrigation-water requirements of the crops, which is a function of the consumptive use of water by the plants, and the efficiency with which the farmer is able to apply that water.

It also is dependent upon the physical characteristics of the soil, particularly as these characteristics relate to the rate at which water can be gotten into the soil, the amount that can be stored in the soil, and the rate at which the water will move through the soil.

Knowing those characteristics, the farmer must then apply his water at such a rate and at such ties and frequencies and in such amounts as will enable him to fill this storage reservoir, so that the plant may extract that water as needed to support its growth. That is the process of irrigation.

The problem comes in making the interpretation and the analysis of these physical data which we must get for each site condition and to interpret these data in terms of schedules, amounts, size of stream, lengths of run, widths of borders, as part of the application procedure, and we could include sprinkling also, and, in addition, to determine the amount of excess waters which are inherent to the application that must be removed through drainage systems.

It is historic that every irrigated area that we have any record of, sooner or later, and to some degree or other, develops drainage problems, largely due to the fact that the water applications are excessive or have been excessive, and the seepage losses from canals have been excessive.

Looking at the overall picture in the United States, as an illustration, we lose from 40 to 50 percent of the water before it gets to the farms through conveyance losses, and after it gets to the farm under current practices we lose another 50 percent.

On these new lands in the reclamation projects where they have no past experience, where the factors which I have just described have not been evaluated, it is essential that these evaluations be made, and that methods of physical application and control be developed so that the farmer will not destroy his resources by erosion or deep percolation or waste his water, which is made available to him at great expense.

Now, after those facts have been established and those methods, which are consistent with his physical conditions have been determined, there is the problem of reducing those findings of fact to practice. This is where the matter of the technical guidance comes in, which is set forth in this document and is to be provided for by the Soil Conservation Service under the headings of "Soil Surveys," "Land Capability Interpretations," and "Technical Guidance." This guidance

enables a reduction to practice, under the conditions which the farmer has, of the recommendations which have resulted from the research, and this must be done on the site, for the most part.

The physical factors relating to soils can be determined in the laboratories, but when you go into the field it becomes a summation of several different miscellaneous factors.

We have to determine the intake rates on the ground, and these change with soils, slopes, and season. We have to determine the storage capacity of the soil and the extraction rate of the moisture by the plants so that we can establish the refill rate.

Now, these soil surveys are necessary to establish the physical factors relating to the soils.

The interpretations of these soil surveys and the land capability interpretations enable the farm planner to go on to any particular farm, and lay out a complete program of water management and crop management, depending on the type of farming in which he is engaged.

The surveys, therefore, you can see are basic, as are the interpretations. The reduction to practice through specific technical guidance has to do with telling the farmer the facts about his site conditions, how he should level his land, the length of run, how he should use furrow irrigation, the width of borders, the length of border, and the size of stream that he should use, and assisting him to develop the procedures for control of the excess waters that result from such applications.

Now, Mr. Chairman, that is a brief statement of the item of $375,000, plus $125,000 for research on the water management, irrigation, drainage, and engineering aspects of this program.

Mr. JENSEN. There is an item here asking for $800,000.

Mr. CLYDE. I have spoken only of the $375,000, plus $125,000 for the irrigation and drainage engineering aspects.

Mr. JENSEN. Do you have a statement to make regarding the balance?

Mr. CLYDE. Dr. Parker is here representing the Bureau of Plant Industry, who will speak on that item.

Mr. JENSEN. Before we go into that, has this service that you have just spoken to the committee about for the irrigators been carried on over the past years?

Mr. CLYDE. Mr. Chairman, yes, sir, it has been carried on over past years. It has been carried on to a limited extent in some areas for many years. In fact, the irrigation program has been going on for about 50 years, since the beginning of the century, but the progress is slow.

Now, the difficulty with these reclamation projects is that all of the new land in a given unit comes ino use at the same time.

Mr. JENSEN. Let us not go into too much detail on it. I think you gave us a very comprehensive and understandable statement in your original explanation.

What I want to know it, has this service been carried on to any degree during the past few years on irrigated lands?

Mr. CLYDE. On irrigated lands, yes, but not on these reclamation projects that are set forth in this proposal.

Mr. JENSEN. Now, let us get this straight. You reclaim land?

Mr. CLYDE. That is right; at least, we help.

Mr. JENSEN. And generally put it into irrigation?

Mr. CLYDE. That is right.

Mr. JENSEN. All right. Now, you say it has been going on in some places and not in others. Just what do you mean by that?

Mr. CLYDE. I mean, for example, that we are doing irrigation research work on the Boise project, near Caldwell, Idaho, but we are doing no research work in the Columbia Basin, and we are doing no research work on the Riverton project, and we are doing none on the Welton-Mohawk project or the Yuma project.

Mr. JENSEN. And your purpose in asking for this fund now is to do work on a number of projects that you have just described?

Mr. CLYDE. That is right.

Mr. JENSEN. Where have you been getting your money to do this work?

Mr. CLYDE. That has been done with regular appropriations made to the Soil Conservation Service for research.

Mr. JENSEN. And this is the first time that you are asking that this committee recommend funds for this purpose for the Department to be turned over to the Soil Conservation Service?

Mr. CLYDE. That is right, to do this and accelerate work on these reclamation projects.

Mr. JENSEN. Why do you feel that it is the responsibility of the Interior Department, through the Bureau of Reclamation, to provide these funds for the water users on these respective projects? When we appropriate money for a project and the water is finally put on that project, do you contend that the Interior Department still has the responsibility for seeing to it that the water is properly used?

Mr. CLYDE. Yes, I think that the Interior Department is interested in that for this reason, that these funds which are provided for the building of reclamation projects are reimbursable funds. The farmer must repay to the Government the cost of constructing these works, and the only way he can do that is to make money on his farm, and the only way he can do that is to be enabled to use this water effectively and efficiently so that he might produce crops which will enable him to make those repayments.

Mr. JENSEN. Of course, the Department of Agriculture has the Extension Service. You have extension agents in almost every county in these United States, and you also have your regular soil conservation districts.

Mr. CLYDE. That is right.

Mr. JENSEN. We have now over 2,400 such districts, and, generally speaking a district comprises a county. So, we have in each one of those districts soil conservation technicians who are trained in the art of proper soil conservation practices. They are schooled in the art of soil conservation, and many of them are trained specifically to see that water is properly used and that soil conservation practices and water conservation practices are carried on on level ground such as irrigated ground, generally speaking.

Is it not a fact that if we permit the appropriation to go into effect that you are asking for here today that it will be an overlapping of responsibilities to some degree?

Mr. CLYDE. No, sir; for these reasons:

First of all, the extension people are set up to disseminate information, educational information. They do not go into an area and provide the technical guidance which provides physical surveys and plans and specifications for putting these practices into effect.

Second, the information is not known, the technicians do not have the information which will enable them to give to the farmers the kind of guidance which will enable them to increase their irrigation efficiency up to 25 percent or, say, 40 percent, or 50 percent. Even after 50 years of work the overall efficiency in the use of water on irrigation projects is not greatly in excess of 25 percent on the overall picture.

Mr. JENSEN. Before you proceed further I want you to understand that what this committee is attempting to ascertain by these questions which I am asking, and which other members will no doubt ask, is whether or not this committee is justified in making this appropriation for the Interior Department to carry on this activity, or whether or not the Department of Agriculture subcommittee of the Appropriations Committee should handle this item.

I have never had the privilege of meeting you before, Mr. Clyde, but I presume you have heard of my great interest in soil conservation.

Mr. CLYDE. Yes, sir; I have, Mr. Jensen.

Mr. JENSEN. I have harped on that so long and so loud that some folks think I am a fanatic on it, but I shall continue to harp on the need for soil conservation so long as I live and have a breath left in my body, because I know how important it is.

Without a doubt the work that you do, as you have just explained, is necessary. I do not question that at all, but as I said before it appears, and I say this frankly it appears to me that that is the responsibility of the Department of Agriculture, and not of the Interior Department. I am still unsold, even though you try to justify that from the standpoint that you help these folks produce more crops. Actually, that is not the duty and the responsibility, so to speak, of the Interior Department. That is the responsibility of the Department of Agriculture.

I will ask you this question, Mr. Lineweaver, if this money is transferred to the Department of Agriculture will it make unnecessary the farm development and homestead assistance program of the Bureau?

Mr. LINEWEAVER. No, sir; it will not obviate the necessity for us to carry on that type of work.

Mr. JENSEN. It would appear to me that you have an awful lot of assistance programs going on at the same time that might be consolidated. How much money is there in the budget for State extension personnel salaries to do this kind of work? Does the Department of Agriculture, the Soil Conservation Service, or any other agency of the Department of Agriculture receive any money; that is, appropriated funds, to pay extension personnel for the work on these irrigation projects which you help on, according to the testimony that you have just given?

Mr. CLYDE. The Department of Agriculture, to my knowledge provides no money for Extension Service personnel who work on these projects, on these items. Dr. Parker has the legislative history of this item that I have been explaining to your committee.

Mr. JENSEN. Possibly not completely. Would you care to give us a short explanation of that, Doctor?

Dr. PARKER. Your questions and the discussion here lead me to believe that the legislative history is not clear.

It is briefly this: The Secretary of Agriculture and the Secretary of the Interior have recognized the need for considering the development program of the Department of the Interior for 3 or 4 or 5 years ahead, so that the Department of Agriculture could reflect the needs for agricultural assistance for these new areas in its own budget.

Last year an item of $805,000 was presented before the Agricultural Committees of the House and Senate. It included the same four general categories for Department of Agriculture work that appears in the 1954 budget of the Department of the Interior.

Last year both the Senate and House committees were favorable to the item, but the House committee expressed the opinion that this work should be performed from funds available to the Department of the Interior through reimbursements from settlers on the projects involved. The Senate committee disagreed with this method for providing funds stating "the committee takes favorable note of the current and proposed work of the Bureau of Plant Industry and the Soil Conservation Service on Federal reclamation projects, and believes that the Department of Agriculture agencies, in cooperation with State agricultural colleges and the Bureau of Reclamation, should carry forward a coordinated program of aid and assistance to project settlers with a view to securing full production on all project lands. Since such a program has the same objectives and should be of the same character as in other parts of the United States, therefore the committee does not consider that the costs involved should be levied against project farmers, as suggested in the House report."

The conference committee went with the recommendation of the House, and I believe also instructed the Secretary of the Interior to consider such an item another year.

Mr. JENSEN. If this committee sees fit to appropriate this amount of money, or any amount of money, for the benefit of water users on Federal projects, will this amount be eventually paid back to the Treasury of the United States, or is this an outright grant?

In other words, will this amount of money be charged to the project on which this money is spent and be made a part of the indebtedness of that project, which will be reimbursed over a period of years which the payout schedule provides on these projects?

Mr. LINEWEAVER. The language provides that it is nonreimbursable, and our position, or the position of the Secretary, has been that farmers and irrigators on reclamation projects are entitled to the same service as irrigators on non-Federal projects.

Mr. JENSEN. I wonder now; I wonder about that and if that would hold water?

Mr. LINEWEAVER. I do not know about it holding water.

Mr. JENSEN. After the taxpayers of America have spent or even loaned these hundreds of millions and billions of dollars to build these great projects, I wonder about that, as against the private landowner who carries on his own financing and looks after his own water conservation and technical program with little assistance from the tax-

payers. I wonder if we could compare those two conditions by any stretch of the imagination?

Mr. LINEWEAVER. I could go into somewhat of a dissertation on that.

Mr. JENSEN. I do not think you are very anxious to do it, are you?

Mr. LINEWEAVER. Yes, if you want it and would like to hear me on it, I would be very glad to.

(Discussion off the record.)

Mr. JENSEN. I do not mind stating to you people that I have, generally speaking, been opposed to one committee of Congress appropriating money to be transferred to another department of Government for their use. I do not think it is a good practice. I think we have done it too much, and I am not going to say at this moment that I am going to close this item, but I am going to say I am going to take a good long, sharp, look at it before I do approve it.

Mr. FENTON. I was very much impressed with Mr. Clyde's technical explanation of the needs for this kind of work, but I do not suppose that is any different from any other of your work that you have been doing with other irrigators, is it?

Mr. CLYDE. It is different to this degree, Mr. Fenton: Here we have a situation and let us take a concrete example of 60,000 acres of land coming into production on the Columbia Basin project in 1 year, and those were the figures that the Bureau of Reclamation have reported as the first unit. Most of this land is settled at the same time. That is, these farmers move onto those tracts, and for that reason, they need this information all at the same time. Now, in the ordinary program, it may take 20 years to fully cover the irrigated areas, or more, but this is a situation where we have got all of these people at the same time. It is a question of protecting an investment of the United States. You can destroy that land resource in 1 or 2 years by improper use of the water.

Mr. FENTON. I quite understand, Mr. Clyde, which leads me to this question: How long have you been affilated with this program?

Mr. CLYDE. I have been with the Soil Conservation Service for 8 years and for 25 years prior to that time I specialized in this work.

Mr. FENTON. I had reference to this particular irrigation project.

Mr. CLYDE. You mean a specific project?

Mr. FENTON. Yes.

Mr. CLYDE. I am familiar with practically every irrigation project in the West.

Mr. FENTON. Has the Department of Agriculture been consulted before an irrigation project of the Reclamation Bureau was authorized, to find out whether or not it was feasible for that particular land to be reclaimed?

Mr. CLYDE. I can speak with assurance on the Weber Basin project in Utah, on which the Department of Agriculture and Bureau of Reclamation worked very closely together on those aspects, because I was a party to it.

Mr. FENTON. What I am trying to find out is whether the Department of Agriculture and their experience along the lines which you have been discussing has been sought before a particular project was authorized?

Mr. CLYDE. I think, in general terms, we could answer that "Yes," but these questions have to be applied to local conditions where every farm is essentially a law unto itself and it has to be considered on the merits of its physical condition. That is what makes it so difficult.

Mr. FENTON. I know they seek the advice of other bureaus in our Government, but I have never heard of them seeking the advice of the Department of Agriculture as to the possibility of a particular piece of land that they wanted to reclaim being feasible or not from an agricultural standpoint?

Mr. CLYDE. If we look at the history of the reclamation projects since 1902, it is true there have been many acres included within reclamation projects which have later been proven to be nonarable.

Mr. FENTON. I was going to ask you that as the very next question.

Mr. CLYDE. Yes, sir. That is a matter of public record.

Mr. FENTON. I do not know whether we have statistics to show as to some of these great irrigation projects we have heard so much about, and no doubt there are a great many that are very fine projects, according to the record which we get here, but I am wondering how many projects were not feasible?

Mr. CLYDE. Mr. Lineweaver, I think, can give you the specific data on that, but to my personal knowledge of this entire reclamation program, I think it has not been unreasonable. It has not been out of line with what we consider good business.

Mr. JENSEN. I think the best way to answer that is that some of these projects could only be put in the feasible category by giving a payout period of at least 90 years. If you can call a project that has to have 90 years to pay out a feasible project, then I do not know much about reclamation.

I think that is the answer, Dr. Fenton. They try to make them feasible by giving them these long payout periods.

Mr. FENTON. I do not think that is quite the answer I want to get at.

Mr. JENSEN. But that is one of the reasons. Go ahead.

Mr. FENTON. We know from Mr. Clyde's statement that there is a great need for technical advice regarding soil, and I believe that the Department of Agriculture is in a position to tell whether that particular soil that they are thinking about getting to in an irrigation project is fit to be considered or not. That is my point.

Mr. CLYDE. You are absolutely right. They can tell.

Mr. FENTON. They can tell that?

Mr. CLYDE. Yes, sir.

Mr. FENTON. So, there is no excuse at all for any irrigation proposals of the Reclamation Bureau being a "dud"?

Mr. CLYDE. That is my feeling.

IRRIGATION PROJECTS FOUND TO BE NONFEASIBLE

Mr. FENTON. I might ask if we can have a record of those projects that have been so found to be nonfeasible and how much money it has cost the Federal Government over the last 10 or 20 years.

Mr. LINEWEAVER. Yes, sir.

(The matter referred to follows.)

BUREAU OF RECLAMATION PROJECTS OR PORTIONS OF PROJECTS FOUND TO BE NONFEASIBLE

No projects or divisions of projects that have been authorized for construction during the past 20 years have failed. However, four projects initiated during the early years of the reclamation program were not successful, and their full cost was charged off. In addition, portions of the construction costs of several of the early projects have been written off by the Congress for the most part by reason of adjustment for nonirrigable lands. The amounts of construction costs charged off listed by projects are shown in the following tabulation:

Chargeoffs authorized by Congress

Project:	*Total*
Belle Fourche	$1,388,305
Boise	82,394
Carlsbad	374,884
Grande Valley	808,796
Huntley	62,050
Klamath	61,754
Lower Yellowstone	392,345
Milk River	2,411,132
Minidoka	2,288
Newlands	4,437,820
North Platte	824,075
Okanogan	1,002,153
Rio Grande	357,841
Riverton	608,034
Shoshone	1,545,129
Sun River	89,651
Umatilla	888,341
Uncompahgre	2,996,373
Yakima	4,214
Yuma Auxiliary	1,007,596
Abandoned projects:	
Garden City	334,475
King Hill	1,987,854
Buford-Trenton (old)	221,424
Williston	409,095

NOTE.—Authority: The above chargeoffs were originally authorized by the Omnibus Adjustment Act of May 26, 1926 (44 Stat. 636), as amended. These chargeoffs were amended or adjusted by the following acts: Belle Fourche, Oct. 28, 1949; Uncompahgre and Shoshone, May 6, 1949; King Hill, June 18, 1934; Newlands, May 29, 1941; North Platte, May 19, 1947; Lower Yellowstone, June 4, 1948; Milk River, June 23, 1952. Buford-Trenton and Williston were charged off by the act of May 26, 1926, and Garden City by the act of June 5, 1920. The Yuma auxiliary chargeoffs are based on the acts of Feb. 26, 1929, and June 13, 1949. Riverton project chargeoffs are provided for by the act of June 23, 1952.

JUSTIFICATION OF PROGRAM

Mr. JENSEN. Mr. Lineweaver, I think the committee would like to have you place in the record your justification, your own personal justification and those of the Department, and we will consider yours as those of the Department when you put them in for this item.

Mr. LINEWEAVER. Yes, sir; I have the justifications here. Mr. Chairman, so we can clear up this item all at one place, I will submit the formal justifications and the supplement confirming what Dr. Parker said as to the way this program was arranged; and, also, I desire to confirm what he has said with respect to the legislative history of this act.

(The matter referred to follows:)

JUSTIFICATION OF ESTIMATE

(Allotment, fiscal year 1954, $800,000)

Purpose and need for funds.—Federal reclamation projects are of vital importance to the Western States and are essential to the agricultural economy of these States and the Nation as a whole. The development of suitable agricultural lands for irrigation, the construction of irrigation water-supply systems, and the many problems incident to the appropriation and use of water are all a part of complex governmental activity. In this task the Department of Agriculture has worked cooperatively with the Department of the Interior and the land-grant institutions in the investigation, planning, development, settlement, and operation phases of Federal irrigation projects. This cooperation has involved the development of research data in a wide variety of fields essential to success in the science of agriculture and the business of farming. It has included also technical assistance and agricultural services necessary to aid project settlers in establishing successful farms and prosperous agricultural communities. Successful irrigation projects make important contributions to the objectives of national agricultural programs.

In recent years there has been a substantial expansion of the reclamation program which has resulted through the addition of new farms to the Nation's agricultural plant, in increased demands for traditional services provided to farmers throughout the rest of the country by the various agencies of the Department of Agriculture. Funds available to the Department of Agriculture have not been sufficient to meet these increasing demands.

Over a period of many years, the Department of the Interior has worked to supplement or complement the services of the Department of Agriculture and the land-grant institutions through cooperative arrangements. Currently around 120 memoranda of understanding are in force with State colleges, experiment stations, and extension services, and with various agencies of the Department of Agriculture. These agreements call for research in a wide variety of fields, for settler assistance, and for technical services such as laboratory soil analysis, snow surveys, weed control, and similar subjects all in addition to the routine work of the Bureau of Reclamation. In fiscal year 1953 the total cost of these services is estimated at $400,000, which is financed from appropriations for the Bureau of Reclamation. For these activities, comparable financing is proposed for fiscal year 1954 in addition to the funds to be provided by this item which are needed to finance the traditional services normally provided free to farmers.

Current programs and appropriations accordingly have been reexamined by representatives of the Department of Agriculture and the Department of the Interior, and the financial requirements of the most essential services have been estimated where such services are not yet available or not provided at a minimum acceptable level. The funds requested in the following estimates represent reasonable costs of the services on Federal reclamation projects to be provided under this appropriation by the Department of Agriculture. Funds appropriated for these functions would be nonreimbursable pursuant to the acts of May 15, 1862 (5 U. S. C. 511), and April 27, 1935, as amended (16 U. S. C. 590a–f), and in keeping with similar other operations of the Department of Agriculture. These funds will not replace and should not be construed to include the cost of the work normally carried by cooperative agreement with the land-grant institutions and by the agencies of the Department of Agriculture.

Only work of the most essential nature has been included in this estimate. As the work progresses and in the interests of the most effective conduct of the program, adjustment in the distribution of activities and funds shown may be necessary. Transfer of these funds will be made in accordance with memoranda of agreement among the participating agencies. In effectuating this program of cooperative effort, these adjustments in turn will be made in consultation with the appropriate representatives of the Bureau of Reclamation and agencies of the Department of Agriculture.

ALLOCATION FROM INTERIOR FOR WORK IN RECLAMATION AREAS, FISCAL YEAR 1954

Project statement

	Estimate, 1954
1. Bureau of Agricultural Economics: For analysis of economic problems in present and potential irrigation areas	$150,000
2. Bureau of Plant Industry, Soils, and Agricultural Engineering: For soil management, irrigation, salinity and weed-control investigations in reclamation areas	150,000
3. Soil Conservation Service:	
(a) For research and engineering investigations relating to irrigation and drainage in reclamation areas	125,000
(b) For soil surveys, land-use capability surveys, and technical assistance to farmers in reclamation areas in planning and laying out proper farm irrigation and farm drainage systems and establishing conservation practices	375,000
Total, Soil Conservation Service	500,000
Total, allocation to Department of Agriculture	800,000

BUREAU OF AGRICULTURAL ECONOMICS

1. $150,000 for analysis of economic problems in present and potential irrigation areas

Need for increase.—Many new irrigation areas are coming into the settlement period as a result of large-scale development in recent years. New reclamation development is also being projected. At the same time, farmers in older irrigation areas are encountering economic problems that require special study. In both the new and the old irrigation areas there is need for economic studies to determine the sizes and types of farms that have the best income prospects under the conditions that are likely to prevail in each area.

This type of information is needed in order to provide a guide for successful settlement of a new project, and to suggest ways of improving farming systems on the older projects to earn more satisfactory returns on investments already made. For example, the question of relative returns from farm flocks of sheep, beef, and dairy cattle needs to be reexamined in the light of market prospects over a period of years.

The net income estimates in irrigation areas need to be compared with income prospects from nonirrigated farming in the areas that are being farmed without irrigation. The cost of shifting to irrigated farming also needs to be analyzed and the net income advantage of irrigation ascertained.

Special economic problems encountered in development and settlement of irrigated land also need to be analyzed, including the cost of preparing land for irrigation, building construction, investment needs for equipment and livestock, and credit needs for farm development. Market outlets need to be explored in relation to prospective increases of specific products in different irrigation areas. The possible need for additional marketing facilities and other community services also requires analysis. Family living costs should be estimated and related to income expectancy for different types and sizes of farms. The possibilities of combining irrigation farming with the use of surrounding dryland and range need to be explored in order that the most efficient and profitable production from all the land resources of an area might be achieved.

Plan of work.—A number of different types of economic studies will be conducted, covering a wide range of economic problems of great importance to irrigation agriculture and to the Bureau of Reclamation in connection with established projects as well as those in various stages of planning and construction. The work described below includes the more urgent problems. The work will be carried out in cooperation with the State agricultural experiment stations, the Bureau of Reclamation, and other agencies.

(*a*) *Determination of farming potentialities in irrigation areas.*—Appraisals will be made of farm income potentialities in selected irrigated areas. The results will indicate the sizes and types of farms that pay out best, considering the crop rotations and livestock combinations that are adapted to the soils and other production and market situations in the respective areas. These appraisals

of income will serve as guides for successful settlement of new areas and for profitable adjustments in existing irrigation areas.

These studies will be designed for appraisal and guidance of specific development projects, but some of the results obtained will have application to other proposed developments in the same general region. These economic studies will be made in areas where sufficient soil and crop research is available to indicate crop adaptabilities and yield expectancies with different production practices on different types of soils in the area. In other words, the soil and crop research will indicate the crops that can be grown; the economic research will show how these can be combined into farming systems that will pay best.

(*b*) *Possibilities for combining irrigation farming with the use of surrounding dry land and range.*—Where the use of all the land resources of an area can be integrated in this way, irrigation development will result in greater income stability because ranchers and dryland farmers will have feed-base protection in drought years. Also irrigation farmers will be less dependent upon markets for specialized crops.

In many western areas the question of relative returns from farm flocks of sheep, beef, and dairy cattle needs to be reexamined in the light of market prospects over a period of years. It seems quite likely that especially in areas where surrounding range is available, irrigation development can result in profitable increases in sheep and cattle production. These products have a wide market and the long-time outlook seems favorable; also farming systems built around these enterprises will emphasize hay and pasture; therefore, they will tend to conserve soil resources, and at the same time meet increasing demands for meat and wool.

(*c*) *Investment and credit needs to develop the best-paying types and sizes of farms.*—With prevailing prices of land, livestock, and equipment, the investment for a new irrigated farm often runs from $25,000 to $35,000. After determination of investment needs in a given area, the kinds of credit arrangements that will be needed to get started, to develop the farm, and to carry on the year-by-year operations will be analyzed; also arrangements for debt repayment that are suited to the income prospects in the development period. Farm investment, income, and expense budgets for different types of farms will be worked out year by year for the development period and for fully developed farms. These budgets will furnish a guide as to credit requirements and help credit agencies in developing programs suitable for irrigated areas.

(*d*) *Effect of rate of farm development on investments and on resulting incomes.*—Information on this question will be needed in order to determine whether a considerable acreage of land should be leveled and prepared for irrigation on each farming unit before settlement.

(*e*) *The market outlook and its relation to the production from irrigated areas of each region.*—In order to determine income potentialities of farms in proposed development areas it is necessary to analyze the longer time market outlook for commodities which might be produced. Some cash crops such as potatoes have a rather limited market which could be easily flooded with a large increase in production. Careful appraisal of the potential size of the market is needed for many fruit and vegetable crops that would grow satisfactorily in irrigation areas, but profitable expansion is limited by the size of the market. Other products have a broader market outlet, but each commodity needs to be studied from the standpoint of potential increases in demand and the possible market opportunities, both nearby and distant. Market studies are needed for appraisal of farming prospects in order to obtain satisfactory estimates of prices that might be received for products of the area as a basis for estimating prospective farm income. But most of the market-outlook work can be done either on a national or regional basis if proper adjustments are made for local area variations in prices.

2. $150,000 for soil management, irrigation, salinity, and weed-control investigations in reclamation areas

As publicly and privately financed irrigation programs have been constructed throughout the West, problems arising from the high saline content of arid soils and irrigation water have impeded settler progress and complicated irrigation operations. The realization of the full productive potential or irrigated lands which is the objective of the Federal Government is in a measure dependent upon the development of solutions to salinity, drainage, and related soil-management problems. In this process careful and continuing research is required. Farmers on irrigated land, and technicians of the land-grant institutions, the Bureau of

Reclamation and the research agencies of the United States Department of Agriculture have all recognized the value of research in this field. The Bureau of Plant Industry, Soils, and Agricultural Engineering is in a position to provide valuable research assistance, and working with the land-grant institutions of the States and the Bureau of Reclamation to provide solutions to pressing problems of soil management. BPISAE facilities are also available to assist the Bureau of Reclamation in the development of methods for the control of water weeds.

Requests have been made by experiment stations in Arizona, Idaho, Wyoming, Montana, Kansas, and Nebraska and other States for assistance in soil management and irrigation research. In the following areas the problems are especially acute:

Central Snake River in Idaho
Riverton and Kendrick projects in Wyoming
Wellton-Mohawk area in Arizona

In addition to these specific locations, salinity and water-quality studies are needed by the Bureau of Reclamation through the irrigated region.

Cooperation.—In all of the States where acute problems have been listed, memoranda of understanding have been developed among the Bureau of Plant Industry, Soils, and Agricultural Engineering; the Soil Conservation Service; the Bureau of Reclamation; and the State agricultural experiment station, which provide for a coordinated research program with each agency conducting the phase for which it has authorization. In some of the States, the Bureau of Agricultural Economics has also been included in these memoranda for their participation in studies of economic problems which need attention. BPISAE conducts phases involving soil crop-fertility-moisture studies relating to crop production, weed control and salinity diagnosis and control. The Soil Conservation Service conducts research on engineering phases of farm irrigation and farm drainage while the Bureau of Reclamation makes available lands or farms and other facilities for conducting the research. The State participates through the State colleges or universities, State departments of agriculture and other offices and assists in coordination work of all agencies.

Central Snake River

Objective.—To study the occurrence and nature of slick spots in the Black Canyon and Mountain Home irrigation projects and develop remedial measures, to determine soil management, irrigation, drainage, and crop-production practices required for successful irrigation of high silt soils.

Problems.—Idaho has the fourth largest acreages of irrigated land of any State in the Union. Preliminary estimates from the 1949 irrigation census show 2,165,000 acres of irrigated land in the State. Of these, nearly 1,200,000 acres were in Federal irrigation projects. House Document 473, 81st Congress, 2d session, the Columbia River reports potential development of 1,034,890 acres of new land along the Central Snake River plus supplemental water for 485,750 acres now irrigated with an inadequate water supply at a total cost of $568,114,000.

It has been estimated that there are 225,000 acres of land in Idaho affected by slick spots which are difficult to irrigate because of slow intake of water, slow drainage, poor structure, and which will not produce satisfactory crop yields unless reclaimed by improved soil-management practices. Large acreages of high silt soils also occur which are slow to absorb irrigation water, slow to drain, and difficult to maintain in a good structural condition for optimum crop production. Research data as a guide for successful management of these soils under irrigation has been recognized as inadequate. Associate Director Kraus, of the Idaho Agricultural Experiment Station, in a letter to the Chief of Bureau of Plant Industry, Soils, and Agricultural Engineering dated April 1, 1950, requested assistance in a cooperative research program as follows:

"There has been and is now much interest in research on slick spots of soils, especially on remedial measures to improve such areas. * * * It has already reached major importance on several irrigation projects, of which Black Canyon project in Idaho is a good example. * * * Because of the importance of the problem and also because it is of a regional nature we would like to request support of the Bureau of Plant Industry, Soils, and Agricultural Engineering on a research project to study slick-spot problems. We propose that this be a cooperative project between your Bureau (PISAE), the Bureau of Reclamation, and the University of Idaho Agricultural Experiment Station."

Plan of work.—The request made by the Idaho Agricultural Experiment Station for participation by the Bureau of Plant Industry, Soils, and Agricultural Engineering outlined a cooperative program between the Bureau of Reclamation, the Department of Agriculture and the State experiment station. Field and laboratory studies would be conducted on methods for improving the water intake and drainage of the slick-spots soils, the soil amendments required to reclaim such soils, and soil and water-management practices needed for successful crop production on the heavy silt soils characteristic of the area. Soil-fertility-plant-water relationships would be studied to determine optimum levels of moisture and fertility to maintain high levels of crop production. The program as outlined would be conducted on the development-farm basis or by utilizing facilities at substations provided by the State.

Riverton and Kendrick projects, Wyoming

Objective.—(*a*) to determine methods for removing excess salt and alkali, (*b*) to develop methods of improving the infiltration and permeability of problem soils, and (*c*) to develop soil-management practices that will maintain the soils in a highly productive state.

Problem.—On December 1 and 2, 1949, a conference was held at Laramie, Wyo., including representatives from the Wyoming Agricultural College, the Soil Conservation Service, Bureau of Agricultural Economics, the Bureau of Plant Industry, Soils, and Agricultural Engineering, and the Bureau of Reclamation. It was mutually agreed by this group that there is urgent need for a development farm on the Riverton project to provide facilities for investigation and demonstration of satisfactory methods of water distribution, drainage, cropping, and cultural practices. The soils in the project vary from very sandy loam to heavy clay loam. Drainage, both surface and deep drainage, is a problem on some of the heavier soils. Seepage losses are a serious problem not only because of water loss but also because of damage to lower lying lands. Information is needed relative to fertilizer requirements, adaptability of the land to different crops, and the most effective methods of irrigation to keep soil and water losses and soil deterioration to a minimum.

The Kendrick project in Wyoming is along the North Platte near Casper and is already under construction and considerable acreage has had water applied. Problems of salinity accumulation and drainage are already in evidence on some of the lands. Certain of these lands have been placed in class 5 (temporarily suspended) by the Bureau of Reclamation, but appear to be potentially irrigable if methods of soil and forage-crop management can be developed which will overcome the harmful effects of alkali and if effective farm drainage can be installed. Research is required to determine the possibility of managing such lands economically.

Need for research in the Kendrick project has been recognized by the Bureau of Reclamation which requested assistance in a letter to the Bureau of Plant Industry, Soils, and Agricultural Engineering dated September 29, 1948.

Plan of work.—The plan for research on the Riverton project involves a development farm to be provided by the Bureau of Reclamation, and technical personnel, equipment, and supplies to be furnished by the cooperating agricultural agencies. It was agreed that the Bureau of Reclamation would do the necessary land development and construct the farm-distribution system. The Bureau of Reclamation would also construct the necessary farm buildings and provide farm equipment. Approximately 20 percent of the farm would be devoted to agricultural research conducted cooperatively by the Wyoming Agricultural Experiment Station, the Bureau of Plant Industry, Soils, and Agricultural Engineering, and the Soil Conservation Service. Some drainage research would also be done in older parts of the project which have been under cultivation for a number of years.

A preliminary study by the salinity laboratory in cooperation with the State experiment station, Soil Conservation Service, and Bureau of Reclamation has revealed the need for more intensive research to correct saline conditions, improve drainage, and determine fertility needs of the various soils.

A memorandum of understanding among the agencies involved outlining the responsibility of each has already been completed. The Bureau of Reclamation has made a farm available on the Riverton project on which to conduct the proposed studies.

Wellton-Mohawk area, Arizona

Objective.—To develop soil and crop-management practices which will reduce soil salinity and assure a successful agriculture on the lands.

Problem.—Irrigation has been conducted on a limited scale in the low-lying valley lands of the vicinity of the towns of Wellton, Roll, and Mohawk in southwestern Arizona, for a long period of years. The only water available has been from pump wells. Water quality has been exceptionally poor, and salts have accumulated in the soils even to the extent of crusting on the surface and along the edges of ditch banks.

Good quality water from the lower Colorado River is being provided by the Bureau of Reclamation construction along the Gila Valley to irrigate approximately 75,000 acres of valley and mesa land in the Wellton-Mohawk area. One development farm has been started on representative mesa land, and another on an area typical of the valley lands requiring the leaching of salts.

The Department of Agriculture has diverted some of its research staff and facilities from the nearby Yuma Mesa project, in order to initiate a limited program of reclamation of saline soils, and cropping studies on the new development farm in the valley. This work is on a very small scale, however, and facilities are inadequate to conduct any research on the mesa farm of this project. A more intensive agricultural research effort is needed on the soil and water-management problems of both mesa and valley lands of the Wellton-Mohawk project.

Plan of work.—The program as outlined would be conducted on the development-farm basis. Field and laboratory studies would be made on methods of managing soils and crops under irrigation so as to prevent harmful accumulation of salts. Water requirements of crops on the various soils would be determined in order to apply the correct amounts for crop growth and provide for removal of excess salts. Soil-moisture-fertility relationships would be studied to develop optimum combinations for satisfactory crop yields.

Salinity, water quality, and related investigations correlated with irrigation feasibility studies of the Bureau of Reclamation

Objective.—To conduct laboratory and field studies on methods and techniques for salinity control, on movement of alkali under irrigation practices, effects of poor quality water on soils and yield of crops, suitability of waters for irrigation use and effects on base exchange properties of soils. These studies would be coordinated with Bureau of Reclamation needs.

Problem.—Irrigation is necessary to support crop production in much of the 17 Western States. Preliminary data from the 1949 census indicate nearly 25 million acres of irrigated land in these States and that full or supplemental irrigation water supplies were available to approximately 6 million of these acres through facilities constructed by the Bureau of Reclamation. Thousands of acres of new lands are brought under irrigation each year. Proposals already authorized or under consideration would add several million more acres to this total. The problem of excessive salt in arid soils has caused much distress in irrigated areas of the West. Under irrigation the accumulation of soluble salts in the surface soils has resulted in decreased yields and demonstrated the need for provision of adequate drainage facilities. The Bureau of Reclamation is giving this problem serious attention and has requested assistance from the United States Salinity Laboratory in all regions of the West. Only preliminary studies on a few of the new areas have been possible under the limited funds available. There are serious problems on some of the older projects where accumulation of salts has caused deterioration of once productive lands.

Plan of work.—Under this program personnel and specialized mobile equipment will be made available to conduct research in specific areas under development or being considered for development such as the Central Snake area in Idaho, the Kendrick project in Wyoming, and the Shadehill area in South Dakota. Research will be conducted on critical areas where feasibility for development cannot be determined satisfactorily without knowing the effect of poor quality of water on soils. In this connection intensive research is needed on the feasibility of draining soils by electroendosmosis. Exploratory field tests by Reclamation workers have confirmed that water can be moved out of heavy wet fields by electric current passed through the soil. Research should be expanded on this process and on whether it results in permanent soil physical improvement. These studies of drainage by electroendosmosis should also include the effects of salinity and soil chemical properties, since drainage and salt removal are inseparable problems in irrigation, and both are essential to a permanent and successful irrigated agriculture.

Weed-control investigations

Objective.—To develop control measures for phreatophytes and aquatic weeds.

Problem and need.—Increasing the irrigation systems of the West is creating new frontiers insofar as agriculture is concerned. With this development has come new problems in weed control in the ditches, on the banks and in the cultivated fields that are peculiar to the situation. Work to date has been very productive but is most inadequate with respect to serving the region. Salt cedar was originally introduced as an ornamental but has now become a serious competitor for the inadequate moisture along stream beds of the Southwest. In addition to its high-water requirement, it also causes sedimentation and eventual flooding of the streams. As the study of acreage infestation and water losses due to salt cedar was started recently, only rough estimates are available at this time. However, incomplete reports indicate that in the southern parts of California, Nevada, Arizona, New Mexico, and part of Texas there are probably over a half-million acres of salt cedar which are consuming close to 2½ million acre-feet of water annually.

Elimination of salt-cedar growths is a Federal responsibility since it is concerned with the control of water robbers on irrigation systems built with Federal funds. Other interested agencies include the Department of the Army. The only work on salt-cedar control is being done by the Bureau of Reclamation in Arizona and New Mexico.

The Bureau of Plant Industry, Soils, and Agricultural Engineering is now studying methods for the control of some of the other aquatic weeds in Washington, Utah, Idaho, and Arizona.

Plan of work.—Work would consist of studies of the life history of phreatophytes (including salt cedar, phragmites, roses, willows, sedges, and tules) and methods of their control. Locations would include California, Arizona, New Mexico, and Montana. Plant physiology laboratories would need to be equipped in Arizona. The Bureau of Reclamation would provide the heavy equipment needed for the research.

Cooperating agencies would include the Forest Service, Soil Conservation Service, the Bureau of Reclamation, and the California, Arizona, New Mexico, and Montana Experiment Stations.

SOIL CONSERVATION SERVICE

3. $500,000 for investigations, soil surveys, and on-site technical assistance

(a) $125,000 for soil and water conservation and engineering investigations in reclamation areas—Need for increase.—There have been many Federal reclamation projects recently constructed and others are now being constructed in the Columbia, Missouri, Colorado, Rio Grande, and other western river basins which will bring several million additional acres under irrigation. Much of this land is in the Dakotas, Nebraska, Kansas, Oklahoma, and Texas, where the seasonal rainfall limits crop production. Irrigation in these areas is used to supplement the rainfall. Irrigation not only provides insurance against drought, but it increases the variety of crops that can be successfully grown. In these areas, little irrigation experience has been accumulated and only limited investigations in water management (irrigation and drainage) have been or are being carried on. Water management (irrigation and drainage) is influenced by the climatic, topographic, soil, and water conditions, and the results of experience and/or investigations are not directly transferable between areas having different physical and climatic characteristics. For example, in the Southwest, irrigation water supplies are very limited and summer rainfall is negligible. Here water must be managed to secure the highest return per unit of water available. In the Middle West, disposal of excess rainfall and the application of irrigation water to meet short periods of moisture deficiency are the paramount problems. Efficient use of irrigation water is a problem on all projects. Excessive conveyance and application losses are known to exist throughout the irrigated West. Such losses and improper uses are causing serious land damage. Soil fertility is being reduced through leaching; top soil is being lost through erosion; and some land has been made nonproductive as a result of waterlogging and accumulation of harmful salts.

Continued high conveyance losses and improper excess water application will cause additional areas to go out of production. Solution of problems in water management (irrigation and drainage practices), including conveyance, appli-

cation, and removal of excess water, and the adoption of practices based on these solutions, are essential to continued production of the lands being currently irrigated and to new lands that will be irrigated in projects now being constructed or contemplated.

It is a part of the basic and continuing responsibility of the Department of Agriculture and the land-grant colleges to perform research on irrigated areas and provide technical aid to project settlers on those areas.

Plan of work.—The studies for which funds are here requested would be carried on by the Soil Conservation Service in cooperation with the Bureau of Plant Industry, Soils, and Agricultural Engineering and the Bureau of Agricultural Economics of the Department of Agriculture and the respective State experiment stations and, where the dissemination of technical information is involved, the State extension service.

The research of the Soil Conservation Service would consist primarily of studies relating to the engineering aspects of water management in agricultural areas including methods and amounts of water application, conveyance, and prevention or removal and disposal of excess water (drainage). The project areas and the major problems in each are as follows:

(1) Columbia Basin (headquarters, Ephrata, Wash.).—Water application on steep slopes and farm drainage of irrigated land.

(2) Riverton project (headquarters, Riverton, Wyo.) (Including Kendrick and Eden)—Water management related to infiltration, distribution systems, water spreading practices and disposal of excess water.

(3) Gila project (headquarters, Yuma, Ariz.) (lower Colorado).—Studies concerning water application on valley lands, involving parched water tables, and water control and distribution on bench lands.

(4) Republican River Valley (headquarters, Superior, Nebr.) (Nebraska and Kansas).—Designing farm irrigation systems to provide for efficient application of irrigation water and safe disposal of excessive rains, common to the area.

(5) Boise project (headquarters, Boise, Idaho) (Payette Division plus Owyhee and Mountain Home projects).—Methods of water application and farm drainage on irrigated lands.

In carrying out the research relating to the water management (irrigation and drainage) problems enumerated above, the activity would be on "development farms" (selected jointly by the participating agencies) and on typical areas in the respective reclamation projects where the studies may be carried out on a farm scale and in the environment under which the farmer has to work. A small staff of irrigation and drainage engineers and necessary part-time aides would be assigned to the designated cooperative projects and adequate facilities and equipment provided.

(b) $375,000 for soil surveys, land use capability surveys and technical assistance to farmers in reclamation areas in planning and laying out proper farm irrigation and farm drainage systems and establishing conservation practices—Need for increase.—The Federal Government has constructed and has under construction a large number of reclamation projects in the Western States which will make irrigation water available for several million additional acres of land. Settlers on these projects will be confronted with difficult land-use and water and land management problems with which they need technical help. The success of their new irrigation farming enterprises can be made more certain by providing technical assistance in the solution of these problems. There are wide differences in soils, topography, climate, amount and quality of water, need for supplemental water (marginal rainfall belt), crops, etc., between these irrigation projects, and many of these differences exist within a particular project area. Separately and in combination these factors pose farming problems which require technical information and the help of specially trained technicians. Otherwise farmers must resort to "trial and error" irrigation farming which is often costly both in labor lost and damage to land resources.

The Soil Conservation Service is now providing some assistance to farmers in the irrigation projects that are in soil conservation districts. However, the workload is heavy and additional technicians are needed to speed up the planning of improvements in farm irrigation and farm drainage systems and in establishing sound cropping practices. Some irrigation projects are new or in the process of construction and not yet included in organized soil conservation districts, but help is urgently needed by the new settlers. The Federal Government has a large investment in these projects and every justifiable means possible should be taken to assure their success.

Plan of work.—The Soil Conservation Service would provide the technical planning and application assistance needed on individual farms. Physical investigations of the soil to supplement where needed, existing information from Bureau of Reclamation land classification, drainage and other investigations would be made and the use-capability of the land on the projects determined. Technical assistance would be provided in laying out farm irrigation systems and farm drainage on the land getting conservation farming practices established. Assistance would be given in planning measures to protect reservoirs from sediment drainage.

According to appropriate covering memoranda of agreement, farm planning and technical assistance will be carried out on each of the Federal reclamation projects to the extent required by the progress of irrigation development. Initial attention will be focused on the Wellton-Mohawk project, Arizona; Minidoka project, Idaho; Milk River project, Montana; Bostwick division, Missouri River Basin project, Kansas-Nebraska; Frenchman-Cambridge division, Missouri River Basin project, Nebraska; Columbia Basin project, Washington; and the Riverton and Kendrick projects, Wyoming.

Working with technicians of the Bureau of Reclamation and the land-grant institutions, soil surveys will be conducted to the extent practicable and within the limitations of the funds requested. To be of maximum utility, these surveys must be conducted prior to the assignment of land-use capability ratings by the Soil Conservation Service and prior to Bureau of Reclamation land classification surveys. The availability of soil surveys, however, will not in any way be construed to interfere with essential land-classification programs of the Bureau of Reclamation. The soil surveys and land use capability surveys listed below will be completed on the following areas:

State	*Project*
North Dakota	McHenry County and adjoining areas, and Heart Butte Reservoir area
South Dakota	Spink County and adjoining areas
Nebraska	Nebraska, Hall, and Buffalo Counties
Kansas	Glen Elder unit, and Kirwin and Webster Reservoir areas
Idaho	Black Canyon and Central Snake areas
Wyoming	Keyhole and Boysen Reservoir areas

VALUE OF WORK OF SOIL CONSERVATION SERVICE

Mr. JENSEN. I do not think this committee is so interested in the legislative history of this act, for the simple reason that the members of this committee will make up their own mind as to whether this item should be in this bill or not. I think that is what this committee is going to do. I am satisfied, as I think every member of the committee is, that this kind of technical information is of great benefit to the water users; but, as I said before, the question is: Should this committee recommend and put in our bill this item, or should we make a recommendation that it should not be in this bill; that it should be handled by the Appropriations Subcommittee for Agriculture?

Now, in closing, let me say this: I want it to be thoroughly understood that I have the highest regard for the Soil Conservation Service of the Department of Agriculture, and I do not think anyone ever questions that statement. The Soil Conservation Service has done a great work on private lands, and it has had very little money. We have appropriated very little money, comparatively speaking, for conserving our soil and moisture on the public domain. I believe it is less than a penny an acre, which is a crime, in my book. I have stated that on so many occasions that I hesitate to say it again. So, whatever this committee does, and if we should see fit to deny this item, I want you to know, Mr. Clyde, and your colleagues in the Soil Conservation Service, that it is no reflection on the high esteem that we hold for the Soil Conservation Service.

Mr. LINEWEAVER. Mr. Chairman, I would like to add that we in our statement will show that we have the same regard for the BPI and the BAE as well as the Soil Conservation Service in working out this cooperative program. We feel that this item, or whatever the Appropriations Committee advises should be appropriated, should be in one bill or another, either in Interior or Agriculture.

Mr. BUDGE. Mr. Lineweaver, I note that Mr. Clyde stated the Department of Agriculture had gone before the Agriculture Committees of the House and the Senate for authorizations. Would it be your impression that it would be your responsibility to go before the legislative committees of the House and Senate in order to include this item in your Department?

Mr. LINEWEAVER. That was last year, Mr. Budge, when we went before the committees. Our position has been that this is authorized, the transfer of these funds, under the Soil Conservation Act of 1936, and it does not require any legislative authorization.

Mr. BUDGE. I understood Mr. Clyde to state that was what they did.

Mr. LINEWEAVER. That was Dr. Parker. They went before the Appropriations Committee.

Mr. BUDGE. You meant the Subcommittee on Agricultural Appropriations?

Dr. PARKER. Yes, sir.

Mr. LINEWEAVER. We have gone before the Agriculture Subcommittee and supported this item before the Agricultural Appropriations Subcommittee over the last several years.

Dr. PARKER. May I make just one additional comment?

Mr. JENSEN. Yes, sir; go right ahead.

ADVISABILITY OF PROVIDING FUNDS BY DIRECT APPROPRIATION TO DEPARTMENT OF AGRICULTURE

Dr. PARKER. I believe the administrative officials of both Departments are of the opinion that it would be preferable that this be appropriated direct to the Department of Agriculture. Is that right, Mr. Lineweaver?

Mr. LINEWEAVER. That is what the administrative people would prefer.

Dr. PARKER. We are under instruction from the Agriculture Committees to whom this was presented for 1953 to present it here. I should like to say that the Agricultural Research Administration has worked closely with the Bureau of Reclamation for a great many years. Most of our field work in the West is on Federal irrigation projects. The Department of Agriculture, rather than the Department of Interior, is authorized to do research work in this field. The success of these reclamation projects depends upon the development of stable agricultural systems based on research and technical assistance.

Mr. JENSEN. You are talking about research funds for the Department of Agriculture?

Dr. PARKER. Yes, sir, for soil and water investigations.

Mr. JENSEN. I had hoped that is what you meant, because certainly this committee has been very liberal in appropriating funds for research investigations.

Dr. PARKER. Yes, sir.

Mr. JENSEN. And, if there is some project that should have been authorized either by the Secretary or by the Congress, then, as one member of this committee, I shall not take any blame, because we have been more than liberal in seeing to it that there was plenty of money appropriated for research investigations to determine whether a proposed project was feasible. We have insisted upon that, but you say the Department of Agriculture has not had enough money for that purpose?

Dr. PARKER. Both Departments have responsibilities and contributions to make on the development of a reclamation project, and the difficulty has been to schedule equitable appropriations to the two Departments. This was an attempt on the part of the two Secretaries to foresee those problems and deal with them in an orderly and coordinated manner.

Mr. NORRELL. I suppose this question has been covered, but what would this money be used for covering agricultural services if it were allowed?

Mr. CLYDE. That is the item on "Technical guidance," as I understand your question. That money would be used to provide the technical guidance to these settlers on these lands to make the soil surveys and to make the interpretations leading to a determination of the agriculture capability and to provide the technical guidance necessary in the design and construction of the farm distribution systems, structure control and development and adaptation to use of the findings with respect to water application and water disposal. Those are the items which would be covered in that section.

Mr. Norrell, I may not know as much about farming as I should, but it seems to me you have a lot of money for that purpose.

Mr. JOHNSON. Mr. Chairman, I wonder if I could say just a word before we close this matter?

Mr. JENSEN. Yes, sir. State your name.

Mr. JOHNSON. My name is Sherman E. Johnson, and I am Assistant Chief of the Bureau of Agricultural Economics. I wish to speak on the first item in the $800,000 budget before you—"Analysis of economic problems." In the consideration of this by the Senate Appropriations Committee in Agriculture last year, the Senate, as Dr. Parker said, agreed on an item of $150,000, which was the amount proposed in the budget for the agricultural economic research, but then the two committees, House and Senate, in conference made this statement:

> The conferees agree that funds for this purpose should be provided by transfer from the Department of the Interior in the future.

However, they did appropriate $50,000 to begin the work in agricultural economics during the present fiscal year, and this is the language:

> The additional $50,000 is included in this bill for 1953, since the Interior Department appropriation bill for next year has been passed by both Houses and Senate without funds for this work.

We do have underway two studies in agricultural economics from the Department of Agriculture appropriation for the present fiscal year, and the $150,000 that is included in the Interior budget here, to be transferred to the Bureau of Agricultural Economics, would provide for a continuation and completion of that work, plus some expansion. This means that this part of the budget before you is a going program.

As far as the Bureau of Agricultural Economics is concerned, the question of where the funds are appropriated, it seems to us in a question for Congress to decide. I do not think there is any question about the need for the work.

If it is agreeable, Mr. Chairman, I would like to leave a short statement for the record.

NEED FOR ANALYSIS OF ECONOMIC PROBLEMS IN PRESENT AND POTENTIAL IRRIGATION AREAS

Mr. JENSEN. Without objection, it will be included in the record.

(The matter referred to follows:)

SUPPLEMENTAL STATEMENT ON THE NEED FOR ANALYSIS OF ECONOMIC PROBLEMS IN PRESENT AND POTENTIAL IRRIGATION AREAS

Research under the proposed allocation to the Bureau of Agricultural Economics centers around the general question: How can farming be made most profitable in irrigation areas? This question is of key importance to the Bureau of Reclamation in planning irrigation development, to land-grant colleges and other agencies in guiding settlement and development of irrigation farming, and most of all, to prospective farmers in irrigation areas. Specific project areas are selected and studied in cooperation with the State agricultural experiment stations and the Bureau of Reclamation. Although the studies are designed for appraisal and guidance of specific projects, much of the resulting information will have application to other irrigation areas in the same general region.

Two studies have been started in the present fiscal year under an appropriation of $50,000 contained in the Agricultural Appropriation Act for 1953. In approving this item for 1953, the conference committee of the House and Senate indicated that "funds for this purpose should be provided by transfer from the Department of the Interior in the future." The allocation of $150,000, therefore, provides for continuation of the work being started this year. No funds are included in the Agriculture budget for fiscal year 1954.

Following are some of the more urgent economic questions that are being asked by farmers and public agencies, both on established projects and those in various stages of planning and construction.

1. What sizes and types of farms will pay best in the area under study? To obtain practical answers to this question it is necessary to combine information developed by soil and crop specialists on the kinds of crops most suited to the area and the yields to be expected with economic information on prospective costs and prices in view of potential markets for the products that can be grown. From such yield, cost, and price information, the receipts, expenses, and net income that can be expected from farming systems with different combinations of crops and livestock are estimated. The best paying systems of farming are determined after analyzing income results from different possible combinations of crop and livestock production.

This type of information is needed to provide guidance for successful settlement of a new project and to suggest ways of improving farming systems on older projects. For example, a study of the tricounty irrigation area in cooperation with the University of Nebraska indicated that net income to the farm family on 160-acre farms could be increased 2 to 4 times above prevailing levels if more land were brought under irrigation and if more livestock were kept. Let us suppose a small irrigation project of 300 farms; then, if a study of this kind could point out opportunities for increasing the annual net income about $1,000 per farm, it would mean an added income on the project of $300,000 a year.

2. How will farm income under irrigation compare with nonirrigated farming? Irrigation is a relatively new development in the subhumid areas of the Great Plains. These areas have an established dry-farming economy. Irrigation experience in arid or semiarid areas is entirely inadequate to guide irrigation development in subhumid areas, where relatively high crop yields can be obtained without irrigation in favorable years. In these areas it is necessary to compare investments and incomes with and without irrigation over a period of years that include both low and high rainfall experience. In this way we can determine how far east project-type irrigation can be extended profitably.

3. Should irrigation farming be combined with dry-land farming and with use of surrounding rangeland? Where the use of the land resources of an area can be combined in this way, irrigation development should result in greater income stability because the irrigated land will furnish feed base protection in drought years. Also irrigation farmers will be less dependent upon markets for specialized crops.

4. How much and what kinds of credit will be needed to develop and operate the best paying types and sizes of irrigated farms? With prevailing prices of land, livestock, and equipment, the investment for a new irrigated farm often runs from $25,000 to $35,000. A recent study in the Republican River Valley of Nebraska and Kansas indicates that net incomes to the farm family on 160-acre farms with 100 acres of irrigated land could be more than tripled with the introduction of irrigation. In this area a nonirrigated farm of 100 acres is too small to provide a good living for a farm family. If the land is irrigated the scale of operations is greatly increased, but an operator of a dry-land farm in this area would have to increase his investment about two-thirds in order to shift to irrigation farming. And his annual operating expenses would increase about 40 to 45 percent. Credit arrangements, therefore, need to be developed to facilitate such shifts and to carry on the year-by-year operations.

5. What effect will the rate of farm development have on investments and resulting incomes? A slow rate of irrigation development will postpone the income advantages of irrigation farming. A study made some years ago of settlement progress on the Vale-Owyhee project in eastern Oregon indicated that farmers who could develop only part of their irrigable land had low crop yields and very few livestock in the early years. This means that they had extremely low incomes. But farmers without much capital may be forced into a slow development program. We need to determine the difference in income prospects, and whether special credit arrangements would pay out.

6. What are the price and market prospects for the products of irrigation areas? Analyses of potential market outlets for different products and of prospective prices are necessary as a basis for estimating prospective incomes from irrigation farming. Many cash crops such as potatoes, fruits, and vegetables that would grow well in irrigated areas have only limited expansion possibilities. Livestock products on the other hand are likely to have a wider market, but feed crops and livestock usually mean less intensive farming and lower value of production per acre. In this connection we need to analyze the relative returns from sheep, beef cattle, and dairy cattle in view of marked prospects over a period of years.

Farmers in present irrigation areas as well as those who are considering shifting to irrigation are vitally interested in these and related questions. They are investing their life savings in irrigation farming. Many are incurring large indebtedness to establish irrigrated farms. They need guidance in determining whether such investments are likely to pay out, and what sizes and types of irrigated farms will pay best.

Of the two studies now under way, the Middle Loup area of Nebraska involves potential irrigation development in a subhumid area. The W. C. Austin project in Oklahoma is also in a subhumid area. Irrigation farming is still in the early stages of development. Most of the irrigated land is being used for the production of cotton. Analysis is needed of the most profitable types and sizes of irrigated farms as a basis for facilitating shifts to more stable systems of irrigation farming.

The proposed transfer of $150,000 would enable the Bureau of Agricultural Economics to continue cooperative work with the State agricultural experiment stations to complete these two projects, and would make it possible to initiate similar research in other areas of the Great Plains and the Far West. Additional study areas would be selected in cooperation with the Bureau of Reclamation and the agricultural experiment stations on the basis of urgency of need and applicability of results to relatively large areas.

Mr. JENSEN. Is that all, gentlemen?

Mr. LINEWEAVER. Yes, sir, on that part of the budget.

Mr. JENSEN. All right, thank you.

General Investigations

Amounts available for obligation

	1952 actual	1953 estimate	1954 estimate
Appropriation or estimate:			
Reclamation fund, special fund	$3,810,000	$3,200,000	$5,320,000
Colorado River development fund	500,000	500,000	500,000
General fund	190,000	300,000	430,000
Total appropriation or estimate	4,500,000	4,000,000	6,250,000
Prior year balance available	504,829	424,676	
Reimbursements from non-Federal sources	123,619	23,767	
Reimbursements from other accounts	9,261	6,000	9,000
Total available for obligation	5,137,709	4,454,443	6,259,000
Balance available in subsequent year	−424,676		
Obligations incurred	4,713,033	4,454,443	6,259,000

NOTE.—Reimbursements from non-Federal sources above are from the Reclamation Trust Fund (Interior Department Appropriation Act, 1953).

Obligations by activities

Description	1952 actual	1953 estimate	1954 estimate
Direct Obligations			
1. Engineering and economic investigations:			
(a) Reconnaissance	−$843	$29,562	$57,620
(b) Basin surveys	879,769	1,003,502	1,184,853
(c) Project investigations	2,698,721	2,372,708	2,370,112
(d) General engineering and research	187,228	165,672	172,415
2. Advance planning:			
(a) Canadian River project, Texas	111,026	164,034	350,000
(b) Central Valley project: Sacramento River division, Sacramento canals unit, California			631,000
(c) Collbran project, Colorado		117,000	400,000
(d) Middle Rio Grande project, New Mexico	46,739	75,000	444,000
(e) Minidoka project, Idaho:			
(1) American Falls power division	34,598	5,000	
(2) North Side pumping division	100,608	105,092	
(f) Provo River project: Deer Creek division, Deer Creek power plant, Utah	4,854	3,000	
(g) San Diego project: San Diego aqueduct—second barrel, California	100,000		
(h) San Luis Valley project: Rio Grande division, Colorado			275,000
(i) Solano project, California	35,622		
(j) Vermejo project, New Mexico	2,235		
(k) Weber Basin project, Utah	305,303		
(l) Yakima project: Kennewick division, Washington	61,861		
3. Investigations of existing projects	42,134	45,116	35,000
4. Alaskan investigations	205,999	250,675	330,000
5. Prior year balance of advances to chief engineer, Denver, Colo., and centralized project activities in the regional offices	−112,082	112,082	
Total direct obligations	4,703,772	4,448,443	6,250,000
Obligations Payable Out of Reimbursements From Other Accounts			
1. Engineering and economic investigations:			
(a) Reconnaissance	846		
(b) Basin surveys	4,374		
(c) Project investigations	4,041	6,000	9,000
Total obligations payable out of reimbursements from other accounts	9,261	6,000	9,000
Obligations incurred	4,713,033	4,454,443	6,259,000

Obligations by objects

Object classification	1952 actual	1953 estimate	1954 estimate
Summary of Personal Services			
Total number of permanent positions	1,167	801	1,066
Full-time equivalent of all other positions	18	13	23
Average number of all employees	826	718	977
Average salaries and grades:			
General schedule grades:			
Average salary	$4,580	$4,917	$4,725
Average grade	GS–6.9	GS–7.5	GS–7.0
Crafts, protective, and custodial grades:			
Average salary	$2,804	$2,830	$2,750
Average grade	CPC–3.7	CPC–4.0	CPC–4.0
Ungraded positions: Average salary	$3,720	$3,743	$3,738
Personal service obligations:			
Permanent positions	$3,801,080	$3,514,988	$4,630,169
Part-time and temporary positions	64,904	43,439	107,674
Regular pay in excess of 52-week base	14,951	13,296	17,483
Payment above basic rates	45,206	51,656	75,650
Total personal service obligations	3,926,141	3,623,379	4,830,976
Direct Obligations			
01 Personal services	3,920,377	3,620,379	4,828,476
02 Travel	267,163	251,458	336,810
03 Transportation of things	26,249	19,930	31,082
04 Communication services	34,200	36,814	49,850
05 Rents and utility services	30,172	35,819	53,268
06 Printing and reproduction	44,700	56,961	76,505
07 Other contractual services	94,704	18,139	265,089
Services performed by other agencies	130,534	175,167	200,280
08 Supplies and materials	110,697	118,286	200,856
09 Equipment	45,449	84,693	210,177
10 Lands and structures	1,035	30,000	
13 Refunds, awards, and indemnities	646	132	115
15 Taxes and assessments	4,689	3,665	5,492
Subtotal	4,710,615	4,451,443	6,258,000
Deduct charges for quarters and subsistence	6,843	3,000	8,000
Total direct obligations	4,703,772	4,448,443	6,250,000
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services	5,764	3,000	2,500
02 Travel	1,128	300	
05 Rents and utility services	44		
07 Other contractual services	1,356	700	1,000
08 Supplies and materials	129	800	500
09 Equipment	840	1,200	5,000
Total obligations payable out of reimbursements from other accounts	9,261	6,000	9,000
Obligations incurred	4,713,033	4,454,443	6,259,000

Analysis of expenditures

	1952 actual	1953 estimate	1954 estimate
Unliquidated obligations, start of year	$927,234	$542,404	$1,020,080
Obligations incurred during the year	4,713,033	4,454,443	6,259,000
	5,640,267	4,996,847	7,279,080
Deduct:			
Reimbursable obligations	132,880	29,767	9,000
Adjustment in obligations of prior years	189		
Unliquidated obligations, end of year	542,404	1,020,080	1,528,080
Obligated balance carried to certified claims account	275		
Total expenditures	4,964,519	3,947,000	5,742,000
Expenditures are distributed as follows:			
Out of current authorizations	4,964,519	3,100,000	4,844,000
Out of prior authorizations		847,000	898,000

Mr. JENSEN. We will now take up general investigations.

Mr. LINEWEAVER. We have here Mr. MacPhail and Mr. Dixon and they will make that presentation.

Mr. JENSEN. We will insert the table on page 27 of the justifications in the record at this point.

(The matter referred to follows:)

Summary by activities

Activity	Estimated costs of investigations in the current program				
	Estimated total [1]	Total to June 30, 1953	Program, fiscal year 1953	Estimate, fiscal year 1954	Balance to complete
1. Engineering and economic investigations	$62,839,867	$24,259,803	$3,804,441	$3,805,000	$30,970,623
2. Advance planning	27,851,489	3,831,631	[2] 604,195	2,100,000	21,315,663
3. Investigations of existing projects	894,000	323,133	49,607	35,000	486,260
4. Alaskan investigations	6,997,146	454,133	297,986	[3] 280,000	5,965,027
Total cost program	98,582,502	28,868,700	4,756,229	6,220,000	58,737,573
Investigation facilities for Alaskan investigations				50,000	
Subtotal			4,756,229	6,270,000	
Less unliquidated obligations, etc			−461,905		
Total obligations			4,294,324	6,270,000	
Less unobligated carryover and contributions			−294,324	−20,000	
Net appropriation or estimate			4,000,000	6,250,000	

[1] Includes investigations estimated to be active in period fiscal year 1953 through fiscal year 1959 inclusive, only.

[2] Includes $3,000 for Deer Creek power plant, Provo River project, Utah, and $105,092 carryover from excess Minidoka project construction funds in the amount of $1,000,000 made available for investigations of the North Side Pumping Division, which was merged with the general investigations appropriation in the General Appropriation Act of 1951, which are included also in the construction program.

[3] Does not include $50,000 for investigation facilities shown below.

MINIDOKA PROJECT

Mr. BUDGE. In that regard, I wonder if you would also insert some explanatory matter relative to that North Side Pumping Division. I do not understand that. I do not want to burden the record here, but I wish you would put in an explanatory statement on that. That is the second item listed at the bottom of page 27, and it involves a transfer of funds from the Minidoka project in the amount of $1 million.

Mr. LINEWEAVER. We will be glad to make that explanation.

Mr. JENSEN. If you can, we would like for you to briefly explain that item at this time.

Mr. LINEWEAVER. That $1,000,000 was left over from construction funds for the Milner Gooding Canal relining and it involves a transfer of Minidoka construction funds in the amount of $1 million, which was made available for investigation of the North Side Pumping Division several years age. This was merged at that time with the general investigation appropriation in the general appropriation act of 1951, which included also the construction program. It was more or less of a paper transaction, which had the approval of Congress when it was merged into the general appropriation item in 1951.

Mr. JENSEN. Would that increase your investigation fund by $1 million?

Mr. LINEWEAVER. In effect, that is what it did, and that was what the preliminary work on the Minidoka North Side was done with and it was used for those wells that were put down in connection with the investigation of the ground water conditions before we proposed construction.

Mr. JENSEN. Is that a routine practice to transfer funds which are left from appropriated funds for construction purposes and transfer them to investigations?

Mr. LINEWEAVER. Not without the permission of Congress. We made a full explanation to the Congress and transfer was made with the approval of Congress each time.

Mr. JENSEN. That has been done over a period of how long?

Mr. LINEWATER. Two or three years.

Mr. BUDGE. I would like a statement as to just what took place, because that increases your general investigations fund, as I understand it, by $1 million, which never came before this committee.

Mr. LINEWEAVER. Yes, sir, it did. We could never have made that transfer if it had not been approved by the committee.

Mr. BUDGE. That is what I am getting at, so we will have a history of it.

Mr. LINEWEAVER. We made a full explanation of it. I think it came first before the deficiency committee, over which Mr. Taber presided in the 80th Congress, and I made the presentation late one afternoon myself.

Mr. JENSEN. That would not have been before this committee.

Mr. LINEWEAVER. I think this subcommittee had a member on it—at least on the deficiency committee.

Mr. JENSEN. No; we had no member on that committee. There were times when they would call in the chairman of each subcommittee that was the chairman of the respective committees which handled the departments which at that time were asking for a deficiency appropriation. I am happy to say the deficiency committee was abolished and now all deficiency requests and supplemental requests come to the respective subcommittees of the Appropriations Committee for consideration, which should have been the case always. I think I can truthfully say it has cost the taxpayers possibly billions of dollars because of the fact that the deficiency committee did not have the knowledge which they should have had on these particular matters when they passed on such requests.

Mr. NORRELL. In other words, the deficiency committee was deficient.

Mr. JENSEN. The deficiency committee was certainly deficient. I have harped about that since I got on the Appropriations Committee, and thank heavens it is now a thing of the past.

(The matter referred to follows:)

SPECIAL LIMITATION FUND FOR INVESTIGATIONS OF MINIDOKA PROJECT, NORTH SIDE PUMPING DIVISION

The Interior Department Appropriation Act, 1947, included, under appropriations from the reclamation fund for construction, the following item:

"Minidoka project, Idaho, $1 million, of which $100,000 shall be available for surveys and preconstruction work in connection with the North Side pumping division."

The Interior Department Appropriation Act, 1949, included the following item for construction under the reclamation fund:

"Minidoka project, Idaho: The limitation on the amount available for surveys and preconstruction work in connection with the North Side pumping division stated in the Interior Department Appropriation Act, 1947, is increased from $100,000 to $147,500."

The Interior Department Appropriation Act, 1950, included the following item under reclamation fund construction:

"Minidoka project, Idaho: The limitation on the amount available for surveys and preconstruction work in connection with the North Side pumping division stated in the Interior Department Appropriation Act, 1949, is increased from $147,500 to $725,000."

The General Appropriation Act, 1951, included "General Investigations" for the Bureau of Reclamation.

"*Provided further*, That the limitation on the amount available for surveys and preconstruction work in connection with the North Side pumping division, Minidoka project, Idaho, stated in the Interior Department Appropriation Act, 1950, is increased from $725,000 to $1 million":

The aforementioned appropriation acts provided a total of $1 million for investigations of the North Side pumping division, Minidoka project, Idaho, which originally was appropriated for construction, but was not required for that purpose, and through the provisions of the General Appropriation Act of 1951, was merged the general investigations appropriation. As of June 30, 1952, there was an unobligated balance of $105,092 in this special fund which is scheduled for use on the North Side pumping division in fiscal year 1953.

NUMBER OF INVESTIGATIONS

Mr. JENSEN. The table on page 3 of the justifications will be inserted into the record at this point. It shows the number and types of investigations for 1952, 1953, and 1954 fiscal years.

(The matter referred to follows:)

GENERAL INVESTIGATIONS

The Bureau is requesting $6,250,000 to continue an adequate program of investigations with the conviction that this amount is necessary in order to accomplish such investigations and advance planning work as is vital to the fulfillment of the ever-increasing water and power demands of the Western States. The status of investigations of all types, excluding a number of investigations for which stream gaging only is in progress, are scheduled as follows:

Status	Number of investigations in program		
	1952 actual	1953 estimate	1954 estimate
Completed	45	48	36
Continued	104	69	43
Initiated or resumed	8	10	15

Number of active investigations in the program [1]

Activity	Actual fiscal year 1952	Program, fiscal year 1953	Estimate, fiscal year 1954
1. Engineering and economic investigations:			
A. Reconnaissance	4	4	4
B. Basin surveys	15	15	14
C. Project investigations	73	62	44
D. General engineering and research	25	22	15
Total, engineering and economic investigations	117	103	77
2. Advance planning	10	6	5
3. Investigations of existing projects	24	14	8
4. Alaskan investigations	6	4	4
Total program	157	127	94

[1] Does not include investigations for which stream gaging, only, is active.

COMPLETED INVESTIGATIONS

Mr. JENSEN. What is the actual backlog of projects on which all investigative work has been completed and are ready for the construction phase? Please put a list in the record showing the estimated cost and the authorization for all of those projects.

(The matter referred to follows:)

Projects ready for construction [1]

Project	Total estimated cost	Authorization
Canadian River project, Texas	$82,731,000	Act of Dec. 29, 1950 (Public Law 898, 81st Cong.).
Central Valley project, California:		
Sacramento River division, Sacramento canals unit.	52,179,000	Act of Sept. 26, 1950 (64 Stat. 1036), and subsequent finding of feasibility by the Secretary of the Interior under reclamation law made Jan. 19, 1953.
Trinity River division	207,334,000	Finding of feasibility by the Secretary of the Interior under reclamation law made Jan. 2, 1953.
Collbran project, Colorado	16,086,000	Act of July 3, 1952 (Public Law 445, 82d Cong., 2d sess.).
Middle Rio Grande project, New Mexico.[2]	[3] 29,606,000	Approved in Flood Control Act of 1948 (act of June 30, 1948) and appropriations authorized in the Flood Control Act of 1950 (act of May 17, 1950).
Minidoka project, Idaho: American Falls power division.	6,817,375	Act of Sept. 30, 1950 (Public Law 864, 81st Cong.).
Provo River project, Utah: Deer Creek division, Deer Creek powerplant.	1,438,000	Finding of feasibility by the Secretary of the Interior under reclamation law made Aug. 20, 1951, and submitted to the Congress Sept. 10, 1952.
Solano project, California [4]	47,111,000	Finding of feasibility by the Secretary of the Interior made Nov. 11, 1948.
Missouri River basin project (phase B units ready for construction):		Flood Control Act of 1944 (act of Dec. 22, 1944) and the Flood Control Act of 1946 (act of July 24, 1946).
Bluff unit, Wyoming	$662,000	
Charley Creek unit, Montana	255,000	
Hanover unit, Wyoming	2,312,000	
Helena Valley unit, Montana	8,314,000	
Glen Elder unit, Kansas	42,230,000	
Glendo unit, Wyoming	48,272,000	
Nickwall unit, Montana	817,000	
Owl Creek unit, Wyoming	3,320,000	
Sargent unit, Nebraska	13,018,000	
Wilson unit, Kansas	16,304,000	
Yellowtail unit, Montana-Wyoming	114,070,000	
Carlsbad project, New Mexico: Alamogordo Dam spillway enlargement.	1,738,000	Finding of feasibility by the Secretary of the Interior made Nov. 1, 1935, and approved by the President Nov. 6, 1935.

[1] Additional preconstruction investigations required to place most of the features of these projects under construction.

[2] Does not include $573,000 for programs of other Interior agencies.

[3] Emergency channelization is under construction.

[4] $3,000,000 appropriated for the project in Interior Appropriation Act of 1953, but actual construction cannot be undertaken until determination is made as to whether it should be made a part of the Central Valley project.

INVESTIGATIONS TO BE COMPLETED IN 1954 AND 1955

Mr. JENSEN. What is the total amount programed for those projects which will be completed in 1954 and 1955?

If you do not have the figure, insert into the record a list for each year, showing the money programed.

Mr. LINEWEAVER. We will we glad to do that. The revisions recommended by Secretary McKay are reflected in the following information on this point.

(The matter referred to is as follows:)

GENERAL INVESTIGATIONS

Field investigations scheduled for completion in fiscal year 1954

Investigation	Estimated total cost of investigation	Fiscal year 1954 estimate to complete
ENGINEERING AND ECONOMIC INVESTIGATIONS		
Reconnaissance:		
1. Henrys Fork project, Wyoming	$25,000	$20,000
2. Opal project, Wyoming	30,000	24,651
3. Snake River project, Mountain Home division, Idaho, Hillcrest unit extension	7,000	7,000
Basin surveys: 1. Santa Ynez River Basin, Calif.	40,000	2,475
Project investigations:		
1. Central Utah project, Utah, initial phase [1]	1,189,000	128,000
Central Valley project (ultimate plan), Calif.:		
2. American River Division, Union Valley unit	224,000	9,672
3. San Luis Division	457,000	73,191
4. Dixie project, Utah	307,000	20,000
5. East Cache project, Idaho, Utah	186,000	2,282
6. Fryingpan-Arkansas project, Colorado [1]	844,782	13,000
7. Grande Ronde project, Oregon	262,000	6,960
8. Marble Canyon project, Arizona	821,800	81,000
9. Moapa Valley project, Nevada	282,000	6,000
10. Orland project, California, Stoney Gorge power division	12,600	2,000
11. Pendleton project, Oregon	240,000	1,375
Rogue River Basin project, Oregon:		
12. Talent Division	357,000	4,909
13. Union Peak Division, Cascade Gorge unit	62,000	2,151
14. Snake River project: Mountain Home division, Hillcrest unit	78,000	14,831
15. Upper Burnt River project, Oregon	36,000	3,872
16. Wapinitia project, Oregon, Juniper division	45,000	5,316
17. Willamette Valley storage utilization project, Oregon	81,000	11,670
18. Yakima project, Washington, supplemental storage	124,000	13,910
19. Yampa River project, Colorado, Wyoming, Little Snake division, Savery-Pot-Hook unit	260,000	5,285
General engineering and research: 1. Small projects, western Montana	21,000	5,415
ADVANCE PLANNING [2]		
1. Canadian River project, Texas	681,149	350,000
2. Central Valley project, California, Sacramento River division, Sacramento canals unit	631,000	631,000
3. Collbran project, Colorado	802,000	400,000
4. Middle Rio Grande project, New Mexico	948,909	444,000
5. San Luis Valley project, Colorado, Rio Grande division	275,000	275,000
INVESTIGATIONS OF EXISTING PROJECTS		
1. Boise project, Idaho, Arrowrock Division, rehabilitation survey	5,000	5,000
2. Buford-Trenton project, North Dakota, financial adjustments	15,875	2,000
Milk River project, Montana:		
3. Financial adjustments	35,000	1,000
4. Rehabilitation survey	5,000	2,000
5. Owyhee project, Oregon, rehabilitation survey	6,000	4,000
6. Umatilla project, Oregon, unreserved space, McKay Dam, financial adjustments	4,000	1,000
ALASKAN INVESTIGATIONS		
1. Wickersham project, Alaska	104,000	2,000
Total	9,505,115	2,581,590

[1] Completion in fiscal year 1954 based on authorization and initiation of advance planning or appropriation of construction funds for preconstruction work on the project in fiscal year 1955.

[2] Completion of advance planning using general investigation funds, only, scheduled, and is contingent upon funds from the "Construction and rehabilitation" appropriation being made available to continue preconstruction work in fiscal year 1955.

Field investigations scheduled for completion in fiscal year 1955

Investigation	Estimated total cost of investigation	Fiscal year 1954 budget	Fiscal year 1955 estimate to complete
I. Engineering and economic investigations:			
A. Reconnaissance:			
1. Dulce project, Colorado and New Mexico	$20,000	$5,349	$14,380
2. Fontenelle project, Wyoming	12,000		10,404
3. O'Neal Park project, Colorado	10,000		9,584
4. Sanpoil-Kettle River project, Washington	4,000	620	564
5. Sterling project, Utah	42,000		12,491
6. Walker River project, California and Nevada	40,000		25,478
B. Basin surveys:			
1. San Luis Obispo County Basin, Calif	155,000	4,796	1,000
2. Snake River Basin, Idaho, Oreg., and Nev	152,000	29,735	18,250
3. Upper American River Basin, Calif	625,000	75,000	75,659
4. Upper Klamath River Basin, Calif. and Oreg	615,000	138,063	33,292
C. Project investigations:			
1. Bear River project, Idaho, Utah, Oneida division	490,000	98,000	13,357
2. Big Wood River project, Idaho	77,000	49,489	6,304
3. Challis project, Idaho	61,000	42,139	2,601
Central Valley project, California:			
4. American River Division, Folsom Canals Unit	316,000	73,469	19,000
5. Friant Division, Friant Power Unit	15,000		15,000
6. Chief Joseph project, Washington, Greater Wenatchee Division	129,000	36,299	6,865
7. Dayton project, Washington	90,000	49,859	9,176
8. Deschutes project, Oregon, supplemental storage	262,000	10,353	1,000
9. Gooseberry project, Utah	80,000	2,000	1,468
10. Las Vegas pumping project, Nevada	100,000	50,000	50,000
11. Milton-Freewater project, Oregon, Washington	194,000	19,739	3,404
12. Saucer Valley project, Colorado	29,000		12,798
13. Trinidad project, Colorado	199,000		151,368
14. Ventura project, California	80,000	40,000	30,000
15. Washoe project, California, Nevada	945,000	220,000	218,824
16. Wichita project, Oklahoma	75,000		75,000
D. General engineering and research:			
1. Operations and maintenance cost and management research	37,000	9,000	9,430
II. Advance planning:			
1. Deschutes project, Oregon, domestic water system	350,000		350,000
2. Fort Cobb project, Okla	150,000		150,000
3. Michaud Flats project, Idaho	150,000		150,000
4. Orland project, California Stony Gorge Power Division	50,000		50,000
III. Investigations of existing projects:			
Grand Valley project, Colorado:			
1. Loma Extension Division, Financial Adjustments	6,000		6,000
2. Orchard Mesa Division, Rehabilitation Surveys	40,000	10,000	22,850
3. Minidoka project, Idaho: Rehabilitation surveys	8,000	3,000	5,000
Missoula Valley project, Montana: Big Flat Unit:			
4. Financial Adjustments	3,000		3,000
5. Rehabilitation	2,000		2,0000
Rathdrum Prairie project, Idaho Post Falls Unit:			
6. Financial adjustments	4,000		4,000
7. Water conservation	2,000		2,000
8. Yakima project, Washington, Sunnyside Division, rehabilitation survey	12,000	5,000	7,000
IV. Alaskan investigations:			
1. Lawing project, Alaska	70,000	20,000	50,000
2. Power Creek project, Alaska	50,000	2,000	48,000
Total	5,751,000	993,910	1,676,547

NEW INVESTIGATION

Mr. JENSEN. What is the total amount of money in the budget for new investigations; that is, investigations for which money has not heretofore been specifically appropriated. Place a list of those projects in the record at this point.

Mr. LINEWEAVER. That is to be by project investigations and the amount of money allotted to each one?

Mr. JENSEN. That is right.

(The matter referred to is as follows:)

New investigations scheduled to be initiated in fiscal year 1954 for which no appropriations have been made previously

Investigation	Estimated total cost of investigation	Fiscal year 1954 estimate	Balance to complete
1. Engineering and economic investigations:			
A. Reconnaissance	None	None	None
B. Basin surveys	None	None	None
C. Project investigations:			
Las Vegas pumping project, Nevada	$100,000	$50,000	$50,000
John Day project, Oregon	588,000	134,145	453,855
D. General engineering and research			
2. Advance planning	None	None	None
3. Investigations of existing projects:			
Boise project, Idaho: Arrowrock Division rehabilitation survey	5,000	5,000	0
Minidoka project, Idaho:			
Financial adjustment	14,000	2,000	12,000
Rehabilitation survey	8,000	3,000	5,000
Yakima project, Washington: Sunnyside Division rehabilitation survey	12,000	5,000	7,000
4. Alaskan investigations:			
Lawing project, Alaska	70,000	20,000	50,000
Power Creek project, Alaska	50,000	2,000	48,000
Total	847,000	221,145	625,855

ARKANSAS, WHITE, AND RED RIVER BASINS

Mr. JENSEN. On page 38 of the record there is an item of $800,000 which is programed for the Arkansas, White, and Red River Basins.

It is understood that the final report on these surveys will take a year to prepare and must be completed by June 30, 1954.

Since it would appear that very little, if anything, that is done after this fiscal year will be usable in a specified program on which the justification is based, will you explain that request?

Mr. DIXON. The date of June 1954 was a date that was decided upon by the 6 Federal agencies engaged in that study about 2 or 2½ years ago, and due to administrative complications in the machination of the work on AWR—that is what we call the investigation of the Arkansas, White, and Red River Basins—they are noticeably behind schedule, and I am sure that the report, if it is made on that date, is going to be one that is quite incomplete, inadequate, and uncoordinated.

If it is going to be a competent report, it will take longer than that. Did I make that plain, Mr. Jensen?

The formal completion date has not been changed, but the facts are that it will probably require at least another year, or the Government and the people of those valleys will get an incomplete job.

Mr. JENSEN. Mr. Dixon, that item is of great interest and direct interest to Congressman Norrell, more so than to anyone else on this committee.

Mr. Norrell, do you have some questions to ask on this project?

Mr. NORRELL. Yes, I would like to know what you have done, to date, with the money which you have had for this project. I understand it was started some time ago. Be as brief as you can, but give us an outline of the situation.

Mr. DIXON. The investigation stretches all the way from the Rocky Mountains to the Mississippi and covers an area that is probably as large as one-seventh or one-eighth of the United States. Six Federal agencies are working cooperatively on this study, under instructions from the President, together with 7 or 8 States.

Mr. NORRELL. Will you state the law under which you are operating?

Mr. DIXON. Yes, sir. That was the Flood Control Act of 1950, I believe. The Flood Control Act called for a comprehensive report for all projects for these river basins. The President requested the Federal Interagency River Basin Committee to create a field committee to carry on the job, and the Arkansas, White, and Red Basin Interagency Committee was therefore created, and the States were all invited to participate. So, there are actually between 20 and 30 Federal and State agencies endeavoring to bring forth one coordinated plan. I may say that has been a part of the difficulty and a part of the cause of the delay. I do not say this in any criticism of those who have been struggling to make it work, but every State has its own problems, and its own agencies, and laws, and policies, and the same is true of the Federal agencies; and they have been unable to resolve certain basic problems.

Mr. NORRELL. What will be the ultimate result of your investigation in this area?

Mr. DIXON. The ultimate result should be a document which would come to the Congress for consideration, and it should have in it a coordinated plan for the development of flood control, navigation, irrigation, power, fish and wildlife, recreation, public health, and all of the resource-development programs that go into making up a basin-wide plan.

Mr. NORRELL. The net result would be, as I understand it, if this Committee that you have mentioned should make a recommendation, a matter for Congress to determine as to whether it wanted to carry out those recommendations or not?

Mr. DIXON. Yes, sir; and for the Congress to determine on what basis it would want to carry them out.

Mr. NORRELL. So far as reclamation is concerned, if you recommended some matter there that would embody the jurisdictions which now exist only in the 17 Western States, I assume there would have to be a law passed to extend the area to cover, so far as the Interior Department is concerned, in the building of a straight-out reclamation project, in the States of Arkansas or Louisiana?

Mr. DIXON. Yes, sir; that would be the case; or there could be a special provision in the authorizing law affecting only those States, plus Missouri.

Mr. NORRELL. Is that correct?

Mr. DIXON. Yes, sir; and there would be a separate project report.

Mr. NORRELL. This is just a factfinding tour now that will culminate in certain recommendations that the Congress will have to act upon in one way or another?

Mr. DIXON. That is entirely correct.

Mr. NORRELL. Will you be able to finish the program with the money that you have requested this year?

Mr. DIXON. I do not think so. I am being completely candid with the committee, because I know you want to know the facts. I do not

think any of the agencies participating, including the State agencies, would agree that the job can be done adequately by July 1954. Yet, the date of July, next year, is still the official date.

Mr. NORRELL. When the project was initiated, what was the estimated cost at that time?

Mr. DIXON. We had a figure for our budget—I will give you my guess, based on my recollection, and I will fill in the correct figure, but I think we figured it would cost very close to $2 million for our part of it. I do not have the original figure.

(NOTE.—The correct figure, supplied later, was $1,952,000.)

Mr. NORRELL. You know you have an authorization that is embodied in your request this year? You know that; do you not?

Mr. DIXON. Yes, sir.

Mr. NORRELL. Does the present authorization permit the Bureau of Reclamation in Interior specifically to do that?

Mr. DIXON. No, sir; the authorization in the bill runs solely to the Corps of Engineers.

Mr. NORRELL. And they, in turn, have asked you to do certain work under the authority granted them?

Mr. DIXON. The President of the United States in signing the bill, the number of which I think was H. R. 5472, wrote to all of the Secretaries of the departments that are members and participants on the Federal Interagency River Basin Committee and, in effect, told the departments that he wanted the skills of all agencies to be applied, and not for the Corps of Engineers alone to do the job, including the functions that are ordinarily done by other agencies.

Mr. NORRELL. Do you have the letter which you received asking you to do the work? I think, maybe, there was some question about that.

Mr. DIXON. I do not have the full letter here.

Mr. NORRELL. You might get it and insert it in the record later.

Mr. DIXON. I have an excerpt from it.

Mr. NORRELL. The letter would show the authority that you had to proceed.

(The matter referred to follows:)

THE WHITE HOUSE,
Washington, May 19, 1950.

Hon. OSCAR L. CHAPMAN,
Secretary of the Interior, Washington, D. C.

MY DEAR MR. SECRETARY: I have signed H. R. 5472, the River and Harbor and Flood Control Acts of 1950. In addition to a large number of flood control and navigation projects, many of which are themselves multiple purpose in character, this act makes special provision for a comprehensive survey of the Arkansas, White, and Red River Basins in the States of Arkansas, Louisiana, Oklahoma, Texas, New Mexico, Colorado, Kansas, and Missouri. The act contemplates the preparation of a report to provide for the best development and use of the water and land resources of these river basins which comprise 177 million acres—almost one-eleventh of the land area of the United States—with a topography and climate varying from the mountains on the west to the coastal plans on the east, and from arid high plains to humid backwater areas of the Mississippi.

The procedure authorized by the act is in lieu of a special-study commission included in earlier versions of the bill, which would have been preferable. It is significant, however, that for the first time there is specifically recognized in legislation of this type the need for a broad-scale study of the multiple uses of the land and water resources of a river basin. It is essential that the executive agencies organize their efforts to realize, as far as possible under existing law, the potentialities of the broad-scale, integrated national resources study for the Arkansas, White, and Red River Basins authorized in H. R. 5472.

In this connection it is important that the efforts of the various agencies be integrated from the very beginning of the investigation. I am sure that you will agree with me that our experience in river-basin investigations demonstrates the importance of integrating the activities of the various agencies starting with the planning of the investigation itself. For the purpose of conducting this survey, I am, therefore, requesting that as a first step the various Federal agencies concerned, including your Department, organize an interagency committee, formulate procedure, and map out a joint plan of investigation, indicating specifically the precise responsibilities of each and the prospective allocation of agency resources to the joint effort.

Because of the language contained in H. R. 5472, it seems desirable that the Department of the Army be designated as the chairman agency. Each agency would, of course, make its contribution in accordance with its responsibilities under existing laws. The final product of such a joint interagency investigation should be a single comprehensive report embracing the coordinated views of all agencies concerned.

I assume that each participating agency and the group as a whole will coordinate its plans and activities with those of the interested States. It is essential that the Federal agencies draw upon the experience and ideas of the people of the area to the fullest extent, and the final report should carry the concurrence or comments of each affected State.

As I see it, such a joint effort does not involve additional authorizations but instead coordination to the maximum extent under existing circumstances of already authorized activities. It is my desire that the survey be undertaken as soon a spracticable and carried forward in fiscal year 1951 using available funds. The 1952 budget estimates of each agency should be prepared with this in mind and would reflect your planning in accordance with the intent of the Congress.

Identical letters are being sent to Departments of the Army, Agriculture, and Commerce, to the Federal Power Commission, and to the Federal Security Agency.

Very sincerely yours,

HARRY S. TRUMAN.

Mr. NORRELL. Will you finish this matter within 1 additional year?

Mr. DIXON. That is our hope.

Mr. NORRELL. Mr. Chairman, I think that is all.

Mr. DIXON. Mr. Chairman, are you through with the general investigations item?

Mr. JENSEN. Yes.

Mr. DIXON. There are certain materials that the committee has historically asked for that we have prepared.

Mr. JENSEN. I believe we made a request to get those in the record.

Mr. DIXON. They were not all picked up by the questions that you asked.

Mr. JENSEN. What ones did we miss?

Mr. DIXON. We have a detailed statement of the program and detailed justifications of each of the functions, not just an overall statement of them. That has been asked for regularly. We have a statement on Alaskan investigations that we thought we ought to enlarge on a little this year, because we have recently had an opportunity to go over the program personally in Alaska. We have a statement on the backlog of projects which is somewhat different from the one you have asked for, and we have the revised schedule of investigations.

Mr. JENSEN. Mr. Dixon, let me say this: The reason we did not ask for that information is the fact that it appears that this committee will operate finally and mark up the bill finally from the revised program, which we will have in due time. So, we did not feel it was essential to have any more information in the record than we have already asked for.

Mr. DIXON. That is quite all right.

Mr. JENSEN. We would, however, like to have a copy of that information left with the committee.

Mr. DIXON. All right, sir.

Mr. JENSEN. We can consider it at the proper time.

Mr. DIXON. All right, sir. I think it is important for me to point out one thing in regard to it. You probably noticed that I had two completely separate sets of materials on this program lying on the table in front of me. The reason was that we did not know whether the hearing today on the general-investigations item was meant to be on the basis of the January printed budget, or on the basis of the revised budget, in the form that the Secretary of the Interior has submitted it to the Bureau of the Budget. I will leave the materials for the use of the committee.

Mr. JENSEN. You will note that we have been doing our questioning from the original budget, which came to this committee from the previous administration and we have asked for the revisions which have already been agreed on by the new Secretary of the Interior, but we still have some revisions. In fact, most of the revised budget for the Bureau of Reclamation has not yet reached this committee from the Bureau of the Budget.

Mr. DIXON. Yes. We share the same dilemma.

Mr. JENSEN. We are simply operating here today on the original budget and with the revised portion which we have available.

Mr. DIXON. I will leave the materials for the committee.

GENERAL ADMINISTRATIVE EXPENSES

Amounts available for obligation

	1952 actual	1953 estimate	1954 estimate
Appropriation or estimate: Reclamation fund, special fund	$5,478,203	$5,250,000	$5,250,000
Transferred from "Construction and rehabilitation, Bureau of Reclamation," pursuant to Public Law 375	300,000		
Adjusted appropriation or estimate	5,778,203	5,250,000	5,250,000
Reimbursement from other accounts	10,251	15,500	15,000
Total available for obligation	5,788,454	5,265,500	5,265,000
Unobligated balance, returned to unappropriated receipts	−15,190		
Obligations incurred	5,773,264	5,265,500	5,265,000

Obligations by activities

Description	1952 actual	1953 estimate	1954 estimate
1. General administration:			
(a) Departmental and Denver offices	$2,846,966	$2,716,600	$2,716,600
(b) Regional offices	2,916,047	2,533,400	2,533,400
Total direct obligations	5,763,013	5,250,000	5,250,000
Obligations Payable Out of Reimbursements From Other Accounts			
1. General administration:			
(a) Departmental and Denver offices	9,786	15,000	15,000
(b) Regional offices	465	500	
Total obligations payable out of reimbursements from other accounts	10,251	15,500	15,000
Obligations incurred	5,773,264	5,265,500	5,265,000

Obligations by objects

Object classification	1952 actual	1953 estimate	1954 estimate
Total number of permanent positions	829	712	719
Full-time equivalent of all other positions	4	4	5
Average number of all employees	786	725	715
Average salaries and grades:			
General schedule grades:			
Average salary	$6,379	$6,607	$6,704
Average grade	GS-9.1	GS-9.6	GS-9.6
Crafts, protective, and custodial grades:			
Average salary	$2,835	$2,886	$2,922
Average grade	CPC-2.9	CPC-3.0	CPC-3.0
Direct Obligations			
01 Personal services:			
Permanent positions	$4,917,296	$4,614,250	$4,593,800
Part-time and temporary positions	9,984	9,575	13,650
Regular pay in excess of 52-week base	17,721	17,857	18,203
Payment above basic rates	11,710	18,910	22,900
Total personal services	4,956,711	4,660,592	4,648,553
02 Travel	357,479	248,845	245,975
03 Transportation of things	24,241	14,265	18,963
04 Communication services	88,760	76,027	77,004
05 Rents and utility services	9,089	14,190	14,389
06 Printing and reproduction	38,785	25,705	21,342
07 Other contractual services	148,476	96,831	103,882
Services performed by other agencies	23,186	25,000	25,000
08 Supplies and materials	63,329	56,928	61,085
09 Equipment	49,718	28,220	29,835
13 Refunds, awards, and indemnities	1,015	1,376	1,405
15 Taxes and assessments	2,814	2,521	2,567
Subtotal	5,763,603	5,250,500	5,250,000
Deduct charges for quarters and subsistence	590	500	
Total direct obligations	5,763,013	5,250,000	5,250,000
Obligations Payable Out of Reimbursements From Other Accounts			
05 Rents and utility services	250		
07 Other contractual services	9,548	15,000	15,000
08 Supplies and materials	453	100	
09 Equipment		400	
Total obligations payable out of reimbursements from other accounts	10,251	15,500	15,000
Obligations incurred	5,773,264	5,265,500	5,265,000

Analysis of expenditures

	1952 actual	1953 estimate	1954 estimate
Unliquidated obligations, start of year	$541,167	$484,159	$800,159
Obligations incurred during the year	5,773,264	5,265,500	5,265,000
	6,314,431	5,749,659	6,065,159
Deduct:			
Reimbursable obligations	10,251	15,500	15,000
Unliquidated obligations, end of year	484,159	800,159	800,159
Adjustment in obligations of prior years	52,275		
Total expenditures	5,767,746	4,934,000	5,250,000
Expenditures are distributed as follows:			
Out of current autorizations	5,293,160	4,450,000	4,450,000
Out of prior authorizations	474,586	484,000	800,000

REGIONAL AND DISTRICT OFFICES

Mr. JENSEN. Under "General administrative expenses," place the tables on pages 257 and 262 of the justifications in the record.

These tables show the total amounts programed for all purposes in each of the regional offices.

(The matter referred to follows:)

Washington, Denver, and regional offices total fund requirements, fiscal years 1953 and 1954

	Fiscal year 1953	Fiscal year 1954
Washington office	$2,006,800	$2,006,800
Commissioner's Office, Denver	709,800	709,800
Region 1, Boise, Idaho	401,800	401,800
Region 2, Sacramento, Calif	359,300	359,300
Region 3, Boulder City, Nev	357,900	357,900
Region 4, Salt Lake City, Utah	294,900	294,900
Region 5, Amarillo, Tex	372,600	372,600
Region 6, Billings, Mont	378,900	378,900
Region 7, Denver, Colo	368,000	368,000
Subtotal, regional offices	2,533,400	2,533,400
Grand total	5,250,000	5,250,000

Centralized project activities requirements, fiscal years 1953 and 1954

Region	Fiscal year 1953	Fiscal year 1954
Region 1, Boise, Idaho	$679,700	$720,500
Region 2, Sacramento, Calif	2,183,000	2,067,000
Region 3, Boulder City, Nev	465,000	325,000
Region 4, Salt Lake City, Utah	388,000	400,000
Region 5, Amarillo, Tex	299,000	289,000
Region 6, Billings, Mont	1,397,300	1,392,900
Region 7, Denver, Colo	525,600	244,000
Total	5,937,600	5,438,400

AMOUNTS PROGRAMED FOR EACH DISTRICT OFFICE

Mr. JENSEN. I would like for you to also provide for the record a further breakdown of the regional figures, showing the amounts programed for each district office.

Mr. LINEWEAVER. Yes, sir.

(The matter referred to follows.)

District office headquarters project activities requirements, estimated for fiscal years 1953 and 1954

District	Fiscal year 1953	Fiscal year 1954
Region 1:		
Central Snake River district	$253,600	$255,000
Columbia River district	2,469,600	2,470,000
Region 2:		
Sacramento Valley district	371,500	370,000
Delta district	885,700	880,000
San Joaquin Valley district	973,800	970,000
Region 3: Lower Colorado River district	1,329,700	1,325,000
Region 6:		
Big Horn district	808,500	805,000
Missouri-Oahe district	1,053,600	1,050,000
Missouri-Souris district	816,900	815,000
Upper Missouri district	608,800	605,000
Yellowstone district	571,100	570,000
Region 7:		
Kansas River district	807,600	805,000
North Platte River district	1,223,300	1,220,000
South Platte River district	1,469,500	1,460,000
Alaska district	261,400	260,000
Total	13,904,600	13,860,000

INFORMATIONAL MATERIAL

Mr. JENSEN. Why are you asking for an increase in the limitation of $150,000 to $200,000 for planning and informational material? Carrying that a little further, what are you publishing this year? What are you going to publish in 1954 for which you are requesting such funds?

Mr. LINEWEAVER. I will submit, for the record, Mr. Chairman, a program of what the publications were when this was proposed when this was made up last fall. I may state, for the information of the committee, that that is already being reviewed and, undoubtedly, will be reduced materially.

Mr. JENSEN. All right.

(The information requested is as follows:)

The request to increase the limitation on expenditures for information work from $150,000 to $200,000, an increase of $50,000, is explained on page 252 of the justification for appropriation submitted to the House Appropriation Committee. The following list shows various items to be published, the cost and appropriation to be charged:

Digest

Publications delivered by or in process of printing at GPO, fiscal year 1953	$54,083
Periodical delivered by or in process of printing at GPO (through May 1953), fiscal year 1953	18,570
Publications tentatively scheduled for balance of fiscal year 1953 (includes June and July issues of The Reclamation Era) $66,700, of which we will probably expend 40 percent	26,680
Total for fiscal year 1953	99,333
Publications tentatively scheduled for printing at the GPO, fiscal year 1954—(not including The Reclamation Era)	50,300

ABBREVIATIONS USED

Reg.—Regional office
P. and F.—Programs and Finance Division
O. and M.—Operations and Maintenance Division
PU—Power Utilization Division
D. and C.—Design and Construction Division, Denver
Comm.—Office of the Commissioner
PP—Project Planning Division

Publications Schedule, Fiscal Year 1953

List of publications submitted to the Government Printing Office for printing within the fiscal year 1953, and delivered or in process

Title	Description	Office of origin	Number of copies	Cost [1]	Appropriation item to be charged	Remarks
Magic Water	Folder	Reg. 1	50,000	$1,672 GPO	C. and R	Delivered.
Hoover Dam	do	Reg. 3	300,000	$3,717 GPO	C. and M	Do.
How Reclamation Pays	Book	P. and F	2,000	$6,538 GPO	C. and R	In process.
The Reclamation Program, 1953–59	Booklet	do	8,000	$2,624 B	do	Delivered.
Settlement Opportunities on Reclamation Projects	Pamphlet	O. and M	17,500	$482 B	do	Do.
Reclamation Pays an Extra Dividend	Booklet	do	7,000	$3,249 GPO	do	In process.
Index to vol. 34, the Reclamation Era	Folder	do	500	$700 BE	do	Do.
A Study of Future Power Transmission in the West	Booklet	PU	8,000	$2,578 B	G. I	Delivered.
Annual Report of the Commissioner	do	Comm	800	$434 GPO	C. and R	In process.
Missouri River Basin, Grand Division, Shadehill Unit	do	Reg. 6	700	$300 GPO	do	Do.
Reclamation	Folder	Comm	132,000	$2,831 GPO	do	Do.
Welding Manual	Book	D. and C	5,000	$4,780 GPO	do	Do.
Irrigation Water Measurement Tables and Diagrams	do	do	5,000	$2,789 GPO	do	Do.
Water Measurement Manual	do	do	5,000	$6,276 GPO	do	Do.
Hungry Horse Dam	Folder	Reg. 1	125,000	$1,676 GPO	do	Do.
Missouri River Basin, Missouri-Souris Division, Jamestown Unit.	Booklet	Reg. 6	1,000	$201 GPO	do	Do.
Missouri River Basin, Yellowtail Unit	do	do	1,000	$248 GPO	do	Do.
Appendices I and II to Reclamation Project Data	Sheet	D. and C	2,750	$189 GPO	do	Delivered.
Missouri River Basin, Heart Division, Dickinson Unit	Booklet	Reg. 6	1,200	$209 B	do	Do.
Fifty Years of Reclamation	do	P. and F	5,000	$3,158 B	do	Do.
Missouri River Basin, Heart Division, Heart Butte Unit	do	Reg. 6	1,200	$170 B	do	Do.
Irrigation Advisor's Guide	Book	O. and M	1,700	$1,454 B	do	Do.
Annotated Bibliography of Hydrology 1941–50	do	D. and C	2,000	$2,092 B	GI	Do.
Missouri River Basin, Savage Unit	Booklet	Reg. 6	1,200	$170 B	C. and R	Do.
Lewiston Orchards Project	Map	Reg. 1	700	$1,046 GPO	do	Do.
Central Valley Project, Trinity River Division (printing mandatory under law).	Book	Reg. 2, PP	1,000	$2,000 BE	do	Do.
Central Valley Project, Sacramento Canals Unit (printing mandatory under law).	do	do	1,000	$2,000 BE	do	In process.
Deer Creek Power Plant, Provo River Project (printing mandatory under law).	do	Reg. 4 PP	400	$500 BE	do	Delivered.
Total				$54,083		

[1] BE—Bureau estimate; GPO—GPO estimate; B—GPO bill.

Periodical submitted to the Government Printing Office for printing within the fiscal year 1953, and delivered or in process

Title	Description	Office of origin	Number of copies	Cost [1]	Appropriation item to be charged	Remarks
The Reclamation Era	August issue	O. and M.	8,500	$1,677 B	C. and R.	Delivered.
Do	September issue	do	11,000	$1,949 B	do	Do.
Do	October issue	do	13,000	$2,177 B	do	Do.
Do	November issue	do	14,000	$2,150 B	do	Do.
Do	December issue	do	14,000	$2,115 B	do	Do.
Do	January issue	do	14,000	$2,158 B	do	Do.
Do	February issue	do	14,000	$2,144 B	do	Do.
Do	March issue	do	8,000	$1,600 BE	do	Do.
Do	April issue	do	7,500	$1,300 BE	do	Do.
Do	May issue	do	7,500	$1,300 BE	do	In process.
Total				$18,570		

List of publications tentatively scheduled. Judging from the percentage published in previous years, approximately 40 percent of the estimated total will be spent

Title	Description	Office of origin	Number of copies	Bureau estimated cost	Appropriation item to be charged	Remarks
Story of Coulee Dam	Booklet	Region 1	50,000	$5,000	O. and M.	
Columbia Basin Project	do	do	50,000	3,000	do	
Yakima Project	Folder	do	3,000	500	C. and R.	
Story of Hoover Dam	Pamphlet	Region 3	10,000	3,000	O. and M.	
Salt River Project	Folder	do	10,000	800	do	
Yuma Project	do	do	10,000	800	do	
Davis Dam	do	do	15,000	800	do	
Developing the Upper Colorado.	Pamphlet	Region 4	20,000	2,500	G. I.	
Missouri Basin Project	do	Region 6	50,000		C. and R.	
Kerwin Dam	Folder	Region 7	5,000	700	do	
Concrete Manual	Book	D. and C.	5,000	11,000	do	
Technical Record—Davis Dam.	do	do	2,500	10,000	do	
Bureau Projects	Map	do	10,000	3,000	do	
Reclamation Dams	do	do	10,000	3,000	do	
Dams and Control Works	Book	do	5,000	20,000	do	
The Reclamation Era (June issue).	Periodical	O. and M.	7,500	1,300	do	
The Reclamation Era (July issue).	do	do	7,500	1,300	do	
Total				[1] 66,700		

[1] Of which $26,680 probably will be spent. See note above.

TENTATIVE PUBLICATIONS SCHEDULE, FISCAL YEAR 1954 [1]

Title	Description	Office of origin	Number of copies	Bureau estimated cost	Appropriation item to be charged	Remarks
Magic Water	Folder	Region 1	150,000	$3,500	C. and R.	
Hungry Horse Dam	do	do	300,000	4,500	O. and M.	
Story of Coulee Dam	Booklet	do	50,000	3,500	do	
Columbia Basin project	do	do	150,000	3,000	do	
All American Canal System	Folder	Region 3	10,000	800	do	
Hoover Dam	do	do	400,000	6,000	do	
Boysen project	do	Region 6	51,000	1,800	C. and R.	
Tiber Dam	do	do	7,000	800	do	
Kirwin Dam	do	Region 7	5,000	700	do	
Earth Manual	Book	D. and C.	5,000	11,000	do	
Reclamation project data	do	Comm.	4,000	13,000	do	
Indexes to The Reclamation Era, vol. 35.	Folder	O. and M.	500	700	do	
Settlement Opportunities on Reclamation Projects.	Pamphlet	do	17,000	500	do	
Annual Report of the Commissioner.	Booklet	Comm.	800	500	do	
Total				50,300		

[1] This is a tentative schedule which was submitted at the same time the 1953 schedule was submitted, and is subject to curtailments, additions, and substitutions.

EMERGENCY FUND

Amounts available for obligation

	1952 actual	1953 estimate	1954 estimate
Appropriation or estimate: Reclamation fund, special fund	$400,000	$400,000	$1,000,000
Prior year balance available	353,510	81,001	
Reimbursements from other accounts		117,673	
Total available for obligation	753,510	598,674	1,000,000
Balance available in subsequent year	−81,001		
Obligations incurred	672,509	598,674	1,000,000

Obligations by activities

Description	1952 actual	1953 estimate	1954 estimate
Direct Obligations			
1. Boise project, Black Canyon Dam, Idaho	$499,730		
2. Milk River project, Montana	162,880	$2,804	
3. Mirage Flats project, Nebraska	8,942		
4. Buford-Trenton project, North Dakota	1,953		
5. Owyhee project, Oregon-Idaho	25		
6. Prior year balance of advances to chief engineer, Denver, Colo	−1,021	1,021	
7. Funds available for emergencies		477,176	$1,000,000
Total direct obligations	672,509	481,001	1,000,000
Obligations Payable Out of Reimbursements From Other Accounts			
7. Funds available for emergencies		117,673	
Obligations incurred	672,509	598,674	1,000,000

Obligations by objects

Object classification	1952 actual	1953 estimate	1954 estimate
Full-time equivalent of all other positions	7		
Average number of all employees	23	1	
Direct Obligations			
01 Personal services:			
Permanent positions	$74,523	$6,774	
Part-time and temporary positions	22,332		
Regular pay in excess of 52-week base	187	26	
Payment above basic rates	17,395		
Total personal services	114,437	6,800	
02 Travel	4,227	200	
03 Transportation of things	2,365		
04 Communication services	344	100	
05 Rents and utility services	79	100	
06 Printing and reproduction	304	100	
07 Other contractual services	93,114	4,225	
08 Supplies and materials	20,420	200	
09 Equipment	302	100	
10 Lands and structures	436,385		
15 Taxes and assessments	540		
Funds available for emergencies		469,176	$1,000,000
Subtotal	672,517	481,001	1,000,000
Deduct charges for quarters and subsistence	8		
Total direct obligations	672,509	481,001	1,000,000
Obligations Payable Out of Reimbursements From Other Accounts			
Funds available for emergencies		117,673	
Obligations incurred	672,509	598,674	1,000,000

Analysis of expenditures

	1952 actual	1953 estimate	1954 estimate
Unliquidated obligations, start of year	$25,435	$52,757	$50,000
Obligations incurred during the year	672,509	598,674	1,000,000
	697,944	651,431	1,050,000
Deduct:			
Reimbursable obligations		117,673	
Unliquidated obligations, end of year	52,757	50,000	340,000
Total expenditures	645,187	483,758	710,000
Expenditures are distributed as follows:			
Out of current authorizations	645,187	360,000	670,000
Out of prior authorizations		123,758	40,000

Mr. JENSEN. Turning to the emergency fund item, there is a request of $1 million for the emergency fund for fiscal 1954, as in previous years?

Mr. LINEWEAVER. Yes, sir; $1 million.

USE OF FUND

Mr. JENSEN. Put the table on page 267 in the record, showing the use of the emergency fund to date, showing specifically, item by item, dollar by dollar, how you have expended this fund.

(The table referred to follows:)

Emergency fund, reclamation projects (2)—An analysis of the emergency fund

Appropriation through fiscal year 1952	$1,400,000		
Appropriation, fiscal year 1953	400,000		
Total appropriation			$1,800,000
Allotments made through fiscal year 1951		$646,516	
Allotments, fiscal year 1952:			
Boise project, Idaho	$500,000		
Buford-Trenton project, North Dakota	31,300		
Milk River project, Montana	165,338		
Mirage Flats project, Nebraska	8,942		
		705,580	
Total allotments as of Dec. 31, 1952			1,352,096
Available for future allotments			447,904

The fiscal year 1952 allotment of $31,300 for Buford-Trenton project and $73,738 of the allotment for Milk River project, shown above, will be reimbursed from funds appropriated to the Secretary for emergency flood and storm repairs under title III, Interior Department Appropriation Act, 1953. Upon accomplishment of these reimbursements the amount available for future allotments as shown above will increase to $552,942. Each of the past 5 years has seen substantial additions made to the capital plant for which the Bureau of Reclamation is responsible. These facilities are new and are not expected to present any real operating problems, but the exposure to acts of God or other unforeseen events become greater with the installation of each generator and completion of each dam. The fund was exhausted during fiscal year 1952. The estimate of $1 million for fiscal year 1954 reflects our experience to date in view of present, plus the continuing increase in, plant facilities.

Mr. JENSEN. How much have you spent out of this million-dollar emergency fund? When did this million dollars go into effect?

Mr. GOLZÉ. In fiscal 1949 the first time. We have had a total of $1.8 million. We had two appropriations after the $1 million. Of the $1.8 million, we have allotted $1,205,000, leaving $595,000 unallotted on March 12 of this year.

Mr. JENSEN. Do you anticipate there will be need for more expenditures from this fund in fiscal 1953?

Mr. GOLZÉ. We have no means of telling precisely. As the name implies, it is an emergency fund, and emergencies come unexpectedly.

PURPOSE OF FUND

Mr. JENSEN. Just what do you spend money out of this fund for, briefly?

Mr. GOLZÉ. It has been used for the repairing of dams, overcoming flood damage to irrigation systems such as occurred in Montana last year, and for repairing canal breaks and lining failures on irrigation

canals. Most of it has been spent on the irrigation operations of the Bureau.

Mr. JENSEN. Who determines what money should be expended out of this fund?

Mr. GOLZÉ. It has to be submitted to the Commissioner and approved by the Commissioner.

Mr. JENSEN. By whom is it submitted?

Mr. GOLZÉ. By the field office where the emergency arises.

Mr. LINEWEAVER. It is submitted to Washington, and we examine it very thoroughly, Mr. Chairman. We have been very careful about that fund so as not to make it an invitation to be used just for any purpose, and we have had many applications for it that we have rejected.

EXPENDITURES

Mr. JENSEN. How much has been spent during this fiscal year, would you say?

Mr. GOLZÉ. We have spent $1,205,000 since we have had the fund. As of December 31, 1952, we had made allotments totaling $1,352,000, but we did not obligate all that money.

Mr. JENSEN. The justification shows that you allocated $500,000 to the Boise project, Idaho; $31,300 to the Buford-Trenton project, North Dakota; $165,338 to the Milk River project, Montana; and $8,942 to the Mirage Flats project, Nebraska, totaling $705,580. Total allotments as of December 31, 1952, were $1,352,096, out of your total appropriations into this fund of $1.8 million, leaving available for future allotments, $447,904, as of December 31, 1952.

Mr. GOLZÉ. Yes, sir. And since that time the money advanced to Milk River project was repaid from a special flood-damage appropriation made to the Department of the Interior.

I have here a statement of all the expenditures made and charged to the fund and the purposes they were for, if you would like to have that for the record.

Mr. JENSEN. Without objection, it will be made a part of the record.

(The statement referred to follows:)

EMERGENCY FUND

A summary statement by project of the emergencies which have required allotments from the emergency fund follows:

Belle Fourche, S. Dak., $25,193.—For replacement of damaged headgates cost of which has been included in amendatory repayment contract.

Boise project, Idaho, $500,000.—For repair of Black Canyon Dam and spillway weakened by successive erosion and undercutting of spillway. Negotiations are currently under way with the water users looking toward a repayment contract to return that part of the cost charged to irrigation. The remainder of the cost of this emergency work will be repaid from power revenues.

Buford-Trenton project, North Dakota, $31,300.—For restoration of damaged facilities occasioned by flood in spring of 1952. This amount was reimbursed from funds appropriated to the Secretary of the Interior for the emergency flood and storm repairs under title III, Interior Department Appropriation Act, 1953.

Grand Valley project, Colorado, $23,678.—For making temporary repairs caused by a landslide at tunnel No. 3 on the High Line Canal. The cost of the temporary repairs will be repaid by the water users' association under terms of an amendatory contract.

Kendrick project, Wyoming, $253,000.—For emergency repairs to the tailrace and channel below Seminoe Dam and access road caused by excessive spring

floodwater, the cost of which will be added to the existing payout schedule payable from power revenues.

Milk River project, Montana, $74,617.—For emergency repair of Spider Coulee and Vandalia flumes the cost of which has been included in an amendatory repayment contract with the water users; replacement of the deteriorated Hay Coulee flume of the Glasgow division; restoration of damaged facilities occasioned by flood in the spring of 1952. Excluded from this total allotment is an allotment of $115,720 which has been reimbursed to the emergency fund from funds appropriated to the Secretary of the Interior for emergency flood and storm repairs under title III, Interior Department Appropriation Act, 1953.

Mirage Flats, Nebraska, $8,942.—For repairs to the main canal to restore water service to the farmers. Repayment of this amount is provided for under an existing repayment contract with the water users.

Owyhee project, Oregon-Idaho, $4,825.—For repairing break in the south main canal and for rehabilitation of the damaged area. The cost of this work was repaid with the regular operation and maintenance assessment for the year.

Rio Grande project, New Mexico-Texas, $166,430.—For emergency repair of gates and spillway at Elephant Butte Dam made necessary by a severe winter and ensuing flood, and for emergency purchase of power for resale in order to keep commitments to power customers following unforeseen water shortages. The cost of these items will be repaid from power revenues.

Riverton project, Wyoming, $143,391.—For replacing washed-out drop and turn-out and two large chutes on the Pilot Canal caused by undermining and winter deterioration. Amendatory contracts with water users have been executed which provide for the repayment of costs incurred for this work.

Yakima project, Washington, $5,000.—For emergency work on the powerplant occasioned by an extremely long and cold winter whereby anchor ice formed in the power canal.

Emergency Fund, Irrigation and Power Systems

The emergency fund was established by Public Law 790, dated June 26, 1948, and the First Deficiency Appropriation Act of 1949, dated May 24, 1949, provided an initial appropriation of $1 million for use as required under the authorizing legislation. The fund is available for the emergency protection and repair of irrigation and power systems, on approval by the Commissioner because of "unusual or emergency conditions." The term "unusual or emergency conditions," as defined in this act—

"shall be construed to mean canal bank failures, generator failures, damage to transmission lines; or other physical failures or damage, or acts of God, or of the public enemy, fires, floods, drought, epidemics, strikes, or freight embargoes, or conditions causing or threatening to cause interruption of water or power service."

The emergency fund is not available to replace other funds except those which in extreme emergencies must be expended before emergency funds could be made available. It is available for emergency repairs only to the extent necessary to keep irrigation water flowing and to maintain power deliveries and, where the emergency requires, the immediate replacement of structures. In the case of major structures, the repair or replacement of which will require a period of months, this fund may be used for getting the work started but, as soon as possible, other funds will be requested for completion of the work. Purchase or development of alternative power or water supplies required to meet emergencies may be made.

Since the initial appropriation of $1,000,000 in 1949, additional appropriations of $400,000 each were made in fiscal years 1952 and 1953. It has been necessary to draw on the fund for emergencies involving 10 projects in the total net amount of $1,205,074. On March 12, 1953, the unobligated balance in the fund was $594,926, as shown in the attached table.

In addition the fund was used to repair damage caused by floods in the spring of 1952. Allotments were made in the amounts of $31,300 and $115,720 to Buford Trenton and Milk River projects, respectively. However, the emergency fund has since been reimbursed from funds appropriated to the Secretary for the emergency flood and storm repairs under title III, Interior Department Appropriation Act, 1953 and is reflected in the unobligated balance stated above.

In order to assure the continued availability of adequate funds to meet emergencies arising on Bureau of Reclamation projects during fiscal year 1954, an appropriation of $1 million is requested.

Status of emergency funds (symbol 14X5043) as of Mar. 12, 1953

Project	Allotment advice No.	Date	Allotments	Net allocation
Belle Fourche	1	Oct. 3, 1949	$80,000.00	
Do	2	May 19, 1950	−54,807.33	
				$25,192.67
Boise	1	Dec. 4, 1951	500,000.00	500,000.00
Grand Valley	1	Feb. 13, 1950	50,000.00	
Do	2	Apr. 25, 1951	−26,304.55	
Do	3	Mar. 27, 1952	−17.83	
				23,677.62
Kendrick	1	July 14, 1950	253,000.00	253,000.00
Milk River	1	Nov. 10, 1949	25,000.00	
Do	2	Oct. 4, 1951	35,000.00	
Do	3	Jan. 2, 1952	9,600.00	
Do	4	Mar. 19, 1952	47,000.00	
Do	6	Dec. 17, 1952	−41,983.42	
				74,616.58
Mirage Flats	1	Aug. 3, 1951	15,000.00	
Do	2	Jan. 30, 1952	−6,058.25	
				8,941.75
Owyhee	1	June 27, 1951	4,825.00	4,825.00
Rio Grande	1	June 20, 1949	50,000.00	
Do	2	Apr. 13, 1950	−46,648.00	
Do	3	Sept. 16, 1950	84,000.00	
Do	4	Jan. 3, 1951	55,000.00	
Power and Storage Division	5	June 7, 1951	30,000.00	
Do	6	June 26, 1952	−5,922.50	
				166,429.50
Riverton	1	June 23, 1949	11,500.00	
Do	2	Sept. 16, 1949	150,000.00	
Do	3	Aug. 31, 1950	−17,945.22	
Do	4	Apr. 26, 1951	−164.15	
				143,390.63
Yakima	1	Apr. 24, 1950	5,000.00	5,000.00
				1,205,073.75
Commissioner's reserve				594,926.25
Total appropriations to date				1,800,000.00
Commissioner's reserve as of Mar. 12, 1953				594,926.25

Recapitulation

Project:	*Net allotment*
Belle Fourche	$25,192.67
Boise	500,000.00
Grand Valley	23,677.62
Kendrick	253,000.00
Milk River	74,616.58
Mirage Flats	8,941.75
Owyhee	4,825.00
Rio Grande	166,429.50
Riverton	143,390.63
Yakima	5,000.00
Total	1,205,073.75
Commissioner's reserve	594,926.25
Total appropriations to date	1,800,000.00
Commissioner's reserve as of Mar. 12, 1953	594,926.25

BALANCE AVAILABLE

Mr. JENSEN. You actually have $613,242 in the emergency fund as of December 31, 1952, because of the fact you were reimbursed the $165,338 which had previously been allotted to the Milk River project in Montana. That amount added to the $447,904 makes a total in the fund as of December 31, 1952, of $613,242.

Now, since there is that much money in this fund at the present time, or about that amount—I do not know if you have made any allotments out of the fund since December 31, 1952, or not.

Mr. GOLZÉ. There was an adjustment made in the Milk River allotment just recently. We were reimbursed in the amount of $115,720 from a special appropriation to the Secretary for emergency flood and storm repairs. Our unallotted balance (Commissioner's reserve) figure is $594,926.

Mr. JENSEN. $594,926?

Mr. GOLZÉ. Yes, sir.

Mr. JENSEN. It would appear that unless something out of the ordinary happens that you would not need an additional $1 million to be deposited in this fund for fiscal 1954.

Mr. GOLZÉ. There is one comment I would like to make. At the time the fund was created, in 1948, and the first $1 million was made available, the investment in the power and irrigation facilities was only about 60 percent of what it is today. In other words, by fiscal year 1954 we will have almost doubled the amount of physical facilities in operation, so we have a greater potential hazard.

Mr. JENSEN. We must also bear in mind that that is all new construction.

Mr. GOLZÉ. That is true.

Mr. JENSEN. And that owing to the fact that it is new construction, and probably better construction than we ever installed before, we can expect damages to those new structures to a degree less than to the older structures. That would be a fair assumption?

Mr. GOLZÉ. Yes, sir.

Mr. JENSEN. So it would appear that if the committee saw fit to allow an additional $500,000, instead of the regular $1 million, that we would be safe, that we would have a sufficient amount in this fund to make the allocations that are necessary for emergency purposes.

GENERAL INVESTIGATIONS

ENGINEERING AND ECONOMIC INVESTIGATIONS

Mr. FENTON. Just one question. On page 27 of the summary by activities, under the item "Engineering and economic investigations," you are asking for $3,805,000. Is that the revised figure?

Mr. DIXON. It happens to be both the original and the revised figure in this case. There is no change.

Mr. FENTON. That is exclusive of the $800,000 asked for the Agriculture Department?

Mr. DIXON. There is no relationship.

Mr. FENTON. No relationship at all?

Mr. DIXON. No, sir.

Mr. FENTON. Then you are asking separately for $800,000 for the Agriculture Department, in addition to this?

Mr. DIXON. That is right.

Mr. FENTON. That is all I want to know.

ALASKAN INVESTIGATIONS

Mr. BUDGE. I note that on page 63 a request is made for $6,220,000 for general investigations for fiscal 1954 for the Territory of Alaska. What is the nature of those projects?

Mr. DIXON. $6,220,000 for Alaska? It is $330,000 altogether for Alaska. You are referring to the total estimated cost, I believe.

Mr. BUDGE. I see I am in error. It is $330,000 for Alaska. What is the nature of the projects you are investigating in Alaska?

Mr. DIXON. Essentially power projects.

Mr. BUDGE. Are there any irrigation projects that you are investigating?

Mr. DIXON. None at this time.

Mr. BUDGE. In other words, this $330,000 is being spent to investigate projects other than irrigation projects?

Mr. DIXON. Yes, sir. I have a statement on Alaska if you would like to look at it.

PRINTING AND REPRODUCTION

Mr. BUDGE. I notice the item for printing and reproduction is increased by almost $20,000. Why is that necessary? That appears on page 65. There is an increase from $56,961 to $76,505.

Mr. DIXON. That is on account of the amount of scheduled project and basin reports to be completed and printed. The reports come to Congress and usually they are ordered to be printed. Congress sends us the bill, and we have to pay for the documents Congress orders to be printed.

Mr. BUDGE. Do you anticipate more reports in fiscal 1954 than in fiscal 1953?

Mr. DIXON. Yes.

Mr. BUDGE. Why?

Mr. DIXON. In the course of working out project investigations, they do not all take the same length of time, so periodically several reports will come at once. Some take a year and a half to complete, some 3 years, and some 5 or even more. So we predicate this estimate on the probable dates of completion of the actual reports that are under preparation and the relative sizes of the documents. We then have our man who is in charge of printing make estimates of the cost of printing on that basis.

Mr. BUDGE. Does this item include anything other than these reports?

Mr. DIXON. I do not think it includes anything other than items relating to the project investigations.

Mr. BUDGE. Two or three months ago I noticed a very nice publication entitled "Reclamation Pays in Added Dividends." It had a picture of a pond and a couple mallard ducks on the cover. Is that the type of publication that is paid for out of this item?

Mr. DIXON. I have not seen it.

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Mr. LINEWEAVER. That would not come out of this item.

Mr. BUDGE. What item does that come out of?

Mr. LINEWEAVER. General administrative expenses—printing, and charged against the limitation.

MINIDOKA PROJECT

Mr. BUDGE. I notice on the Minidoka project $1 million shows up again. The last part was spent in Alaska in 1953, apparently.

Mr. LINEWEAVER. What page is that?

Mr. BUDGE. Page 63. It says under footnote 4:

Includes $105,092 carried over unobligated on June 30, 1952, but available only for use on Minidoka project, north side pumping division, also included in the construction program.

Mr. LINEWEAVER. Yes, sir. May I go back to clear up this $1 million?

Mr. BUDGE. Take this item. What does that footnote refer to?

Mr. LINEWEAVER. To $260,557.

Mr. BUDGE. Which is the prior year balance available?

Mr. LINEWEAVER. Yes; but it has nothing to do with the Alaskan investigations, which is footnote 5.

Mr. BUDGE. Was it used in fiscal 1953?

Mr. LINEWEAVER. It is being used, but only on the Minidoka project. It is included in the construction money.

Mr. BUDGE. That will come out when you give me the history of that item?

Mr. LINEWEAVER. Yes, sir.

Mr. DIXON. There is no transfer of reclamation funds to Alaskan investigations.

Mr. LINEWEAVER. Footnote 5 refers to $50,000 for necessary equipment.

Mr. BUDGE. It is footnote 4 I am referring to.

Mr. LINEWEAVER. I point out that the item referred to has nothing to do with the Alaskan investigations.

Mr. GOLZÉ. This figure that appears at the bottom of $4,294,324 is for everything that is done, American, Alaskan, including Minidoka North Side.

Mr. BUDGE. But this item is being used in 1953?

Mr. GOLZÉ. Only on Minidoka North Side, yes.

HELLS CANYON DIVISION

Mr. BUDGE. I am happy to note the description of Snake River project, Hells Canyon division, as contained on page 41. I want to quote this in the record:

Report completed and submitted to Congress requesting authorization for construction of this large power project. Additional work required in fiscal year 1953 for presentations in Federal Power Commission hearings.

I think that is a little more objective labeling of that project than has been contained in some of the other presentations of the Bureau of Reclamation, and I am happy to see it appear in an official document.

That is all.

Construction and Rehabilitation

Amounts available for obligation

	1952 actual	1953 estimate	1954 estimate
Appropriation or estimate:			
Reclamation fund, special fund	$29,257,650	$49,155,000	$128,439,503
General fund	177,795,075	128,642,991	65,448,497
Total appropriation or estimate	207,052,725	177,797,991	193,888,000
Transferred to "General administrative expenses, Bureau of Reclamation," pursuant to Public Law 375	−300,000		
Adjusted appropriation or estimate	206,752,725	177,797,991	193,888,000
Prior year balance available:			
Appropriation	33,287,016	49,625,211	11,361,025
Contract authorization	6,594,000		
Balance transferred to "Salaries and expenses, defense production activities, Interior, pursuant to sec. 1312, Public Law 253"	−150,000		
Reimbursements from non-Federal sources	123,806		
Reimbursements from other accounts	1,722,449	864,837	1,075,000
Total available for obligation	248,329,996	228,288,039	206,324,025
Balance available in subsequent year (appropriation)	−49,625,211	−11,361,025	−430,378
Rescission of contract authorization, Public Law 136	−5,594,000		
Obligations incurred	193,110,785	216,927,014	205,893,647
Comparative transfers to "Operation and maintenance, Bureau of Reclamation"		−962,582	
Total obligations	193,110,785	215,964,432	205,893,647

Note.—Reimbursements from non-Federal sources above are from the proceeds of sale of personal property (40 U. S. C. 481 (c)). Also $1,000,000 of the 1952 appropriation for this account is excluded from this schedule and is set forth below under the title "Construction and rehabilitation (liquidation of contract authorization), Bureau of Reclamation."

Obligations by activities

[NOTE.—The negative amounts shown in the following table for some projects represent adjustments of actual obligations properly chargeable to the projects and reported in prior years on the basis of estimates.]

Description	1952 actual	1953 estimate	1954 estimate
Direct Obligations			
1. Eklutna project, Alaska	$5,743,441	$13,018,839	$12,791,000
2. Gila project, Arizona	5,621,979	7,036,173	4,500,000
3. All-American Canal, Ariz.-Calif	2,051,409	2,434,298	133,380
4. Parker Dam power project, Arizona-California	−211		
5. Colorado River front work and levee system, Arizona-California-Nevada	1,004,672	1,099,822	1,905,000
6. Boulder Canyon project, Arizona-Nevada	2,609,745	390,671	373,000
7. Davis Dam project, Arizona-Nevada	4,780,872	4,471,207	3,822,000
8. Cachuma project, California	8,674,673	8,500,000	6,546,782
9. Central Valley project, California	24,049,694	27,161,792	29,432,007
10. Kern River project, California	43,217	40,452	10,000
11. Kings River project, California	7,676	9,000	4,324
12. Solano project, California		3,000,000	
13. Colorado-Big Thompson project, Colorado	21,505,591	19,030,891	5,750,000
14. Paonia project, Colorado	35,567	170,000	9,422
15. Pine River project, Colorado	−316		
16. San Luis Valley project, Colorado	163,990	261,955	
17. Boise drainage (Kuna irrigation district), Idaho	195	5,000	
18. Boise project, Anderson Ranch dam, Idaho	154,279	411,778	
19. Boise project, Payette division, Idaho	237,248	192,095	
20. Lewiston Orchards project, Idaho	22,737	2,032	
21. Minidoka project, American Falls power division, Idaho			853,000
22. Minidoka project, Gooding division, Idaho	5,840	6,000	
23. Minidoka project, north side pumping division, Idaho		180,153	1,627,000
24. Palisades project, Idaho	2,183,239	9,922,183	17,650,000
25. Buffalo Rapids project, first division, Montana	88,037	240,267	
26. Buffalo Rapids project, second division Montana	90,623	114,962	
27. Fort Peck project, Montana	883,220	421,879	350,000
28. Hungry Horse project, Montana	22,144,007	12,676,821	673,000
29. Milk River project, Fresno Dam, Montana	73,631	11,651	
30. Sun River project, Montana	34,764	40,220	
31. Carlsbad project, New Mexico	837		
32. Fort Sumner project, New Mexico	54,915	2,862	
33. Middle Rio Grande project, New Mexico	949,111	2,233,000	330,889
34. Tucumcari project, New Mexico	215,616	355,687	
35. Vermejo project, New Mexico	35,594	656,195	1,472,000
36. Rio Grande project, New Mexico-Texas	1,237,445	139,008	545,500
37. W. C. Austin project, Oklahoma	153,652	30,000	
38. Arnold project, Oregon	−440		
39. Deschutes project, north unit, Oregon	267,998	81,924	
40. Grant's Pass project, Savage Rapids Dam, Oregon		638,062	61,938
41. Ochoco project, Oregon	14,305	1,000	
42. Klamath project, Oregon-California	436,081	534,866	335,000
43. Valley Gravity project, Texas	−598		
44. Ogden River project, Utah	−1,249		
45. Provo River project, Utah	2,721,322	2,310,000	404,749
46. Weber Basin project, Utah		1,350,000	6,776,000
47. Columbia Basin project, Washington	27,084,205	20,513,006	21,930,000
48. Yakima project, Kennewick division, Washington		1,500,000	4,000,000
49. Yakima project, Roza division, Washington	57,178	35,040	893,656
50. Eden project, Wyoming	1,626,000	760,000	1,141,000
51. Kendrick project, Wyoming	2,477,866	4,099,192	2,970,000
52. Riverton project, Wyoming	1,361,015	666,273	475,000
53. Shoshone project, Wyoming	350,931	664,022	
54. Missouri River Basin project:			
Phase A, units under construction:			
Angostura unit, South Dakota	1,257,091	1,158,450	
Bostwick division, Nebraska-Kansas	2,108,751	3,914,406	4,500,000
Boysen unit, Wyoming	1,521,433	791,197	
Canyon Ferry unit, Montana	7,208,757	6,451,044	957,000
Cedar Bluff unit, Kansas	−399,797	165,295	30,000
Crow Creek unit, Montana	31,258	833,888	673,000
Dickinson unit, North Dakota	12,048	2,805	
Frenchman-Cambridge division, Nebraska	7,683,772	4,138,825	4,875,000
Fort Clark unit, North Dakota	425,297	135,047	
Heart Butte unit, North Dakota	18,689	368,721	
Jamestown unit, North Dakota	649,060	2,246,917	1,657,000
Keyhole unit, Wyoming	954,913	111,535	
Kirwin unit, Kansas	1,365,406	4,159,906	8,359,000
Kortes unit, Wyoming	111,866	14,451	
Lower Marias unit, Montana	109,219	2,596,892	7,461,000
Missouri diversion unit, Montana-North Dakota	268,980	2,024,477	5,263,000
Rapid Valley unit, South Dakota		1,096,018	4,230,000
Savage unit, Montana	2,762	4,191	
Shadehill unit, South Dakota	111,925	43,005	20,000

Obligations by activities

Description	1952 actual	1953 estimate	1954 estimate
54. Missouri River Basin project—Continued			
Phase A, units under construction—Continued			
St. Francis unit, Colorado-Kansas	$145,715	$81,456	$35,000
Transmission division	12,508,366	21,879,264	19,765,000
Webster unit, Kansas		1,500,000	6,080,000
Drainage and minor completion program			161,000
Subtotal, phase A	36,095,511	53,717,790	64,066,000
Phase B:			
Units ready for construction:			
Bluff unit, Wyoming		14,743	20,000
Charley Creek unit, Montana		11,215	13,000
Glendo unit, Wyoming	175,276	91,726	120,000
Glen Elder unit, Kansas		20,000	50,000
Hanover unit, Wyoming		19,655	52,000
Helena Valley unit, Montana	52,562	25,804	40,000
Nickwall unit, Montana		24,117	25,000
Owl Creek unit, Wyoming	35,929	24,809	30,000
Sargent unit, Nebraska		227,920	45,000
Wilson unit, Kansas		48,700	50,000
Yellowtail unit, Montana	201,624	179,137	35,000
Subtotal, phase B, units ready for construction	465,391	687,826	480,000
Units being prepared for construction	2,200,363	2,131,568	2,120,000
Subtotal, phase B	2,665,754	2,819,394	2,600,000
Phase C, continuing work on the general plan of development	3,383,744	2,476,197	2,000,000
Phase D, work in connection or in cooperation with Corps of Engineers			
Other Department of Interior agencies	5,466,752	5,333,398	4,750,000
Total, Missouri River Basin project	47,611,761	64,346,779	73,416,000
55. Rehabilitation and betterment of existing projects	3,031,357	2,648,802	2,502,000
56. Drainage and minor completion program			1,135,000
57. Water conservation and utilization projects	23,545		
58. Prior year balance of advances to chief engineer, Denver, Colo., and centralized project activities in the regional offices	−653,736	653,736	
59. Replacement of personal property sold	123,806		
Total direct obligations	191,388,336	215,099,595	204,818,647
Obligations Payable Out of Reimbursements From Other Accounts			
2. Gila project, Arizona	10,190		
3. All-American Canal, Ariz.-Calif	345		
5. Colorado River front work and levee system, Arizona-California-Nevada	630,665	131,000	395,000
6. Boulder Canyon project, Arizona-Nevada	9,529		
7. Davis Dam project, Arizona-Nevada	626,837		
8. Cachuma project, California	45,201		
9. Central Valley project, California	26,742		
14. Paonia project, Colorado	580	1,000	
18. Boise project, Anderson Ranch dam, Idaho	948		
19. Boise project, Payette division, Idaho	1,140		
25. Buffalo Rapids project, first division, Montana	46		
27. Fort Peck project, Montana	8,373		
28. Hungry Horse project, Montana	2,600		
34. Tucumcari project, New Mexico	140	140	
35. Vermejo project, New Mexico	210		
39. Deschutes project, north unit, Oregon	520		
42. Klamath project, Oregon-California	5,338		
43. Valley Gravity project, Texas	176		
45. Provo River project, Utah	103	1,000	
47. Columbia Basin project, Washington	162,517	150,000	70,000
50. Eden project, Wyoming	764	3,000	
52. Riverton project, Wyoming	2,942		
53. Shoshone project, Wyoming	161		
54. Missouri River Basin project:			
Bureau of Reclamation	21,251	73,697	
Other Department of Interior agencies	22,358		
55. Rehabilitation and betterment of existing projects	903		
60. Services to other agencies, Denver, Colo., and regional offices	141,870	505,000	610,000
Total obligations payable out of reimbursements from other accounts	1,722,449	864,837	1,075,000
Total obligations	193,110,785	215,964,432	205,893,647

Obligations by objects

Object classification	1952 actual	1953 estimate	1954 estimate
BUREAU OF RECLAMATION			
Summary of Personal Services			
Total number of permanent positions	13,346	11,016	9,493
Full-time equivalent of all other positions	123	139	117
Average number of all employees	9,903	9,230	8,443
Average salaries and grades:			
General schedule grades:			
Average salary	$4,398	$4,593	$4,675
Average grade	GS–6.4	GS–6.8	GS–6.8
Crafts, protective, and custodial grades:			
Average salary	$3,153	$3,146	$3,163
Average grade	CPC–4.8	CPC–4.6	CPC–4.4
Ungraded positions: Average salary	$3,853	$3,794	$3,851
Personal service obligations:			
Permanent positions	43,268,476	41,346,378	37,986,203
Part-time and temporary positions	441,797	530,908	461,657
Regular pay in excess of 52-week base	176,052	170,600	161,036
Payment above basic rates	1,017,896	1,020,499	829,808
Total personal service obligations	44,904,221	43,068,385	39,438,704
Direct Obligations			
01 Personal services	44,730,659	42,546,490	38,822,704
02 Travel	1,380,552	1,546,289	1,335,063
03 Transportation of things	3,431,910	2,941,062	2,837,936
04 Communication services	569,210	607,720	545,366
05 Rents and utility services	801,515	777,413	668,914
06 Printing and reproduction	156,714	237,507	209,723
07 Other contractual services	1,861,809	3,146,390	5,691,359
Services performed by other agencies	786,956	861,901	835,955
08 Supplies and materials	14,991,562	19,796,231	9,722,792
09 Equipment	2,617,694	4,765,261	5,602,126
10 Lands and structures	115,150,333	133,255,378	134,300,455
11 Grants, subsidies, and contributions	267,646	29,500	7,500
13 Refunds, awards, and indemnities	13,607	44,262	95,719
15 Taxes and assessments	85,347	94,976	95,877
Subtotal	186,845,514	210,650,380	200,771,489
Deduct charges for quarters and subsistence	923,930	884,183	702,842
Total direct obligations	185,921,584	209,766,197	200,068,647
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services	173,562	521,895	616,000
02 Travel	2,893	2,060	100
03 Transportation of things	−1,160		
04 Communication services	527	500	
05 Rents and utility services	4,467	1,752	900
07 Other contractual services	160,557	11,754	3,000
08 Supplies and materials	43,705	20,179	10,000
09 Equipment	101,808	110,000	50,000
10 Lands and structures	1,213,732	196,697	395,000
Total obligations payable out of reimbursements from other accounts	1,700,091	864,837	1,075,000
Total obligations	187,621,675	210,631,034	201,143,647
ALLOCATION TO BUREAU OF LAND MANAGEMENT			
Total number of permanent positions	38	38	41
Full-time equivalent of all other positions	16	19	15
Average number of all employees	49	54	53
Average salaries and grades:			
General schedule of grades:			
Average salary	$4,114	$4,069	$4,281
Average grade	GS–6.0	GS–6.1	GS–6.2
01 Personal services:			
Permanent positions	$159,325	$172,557	$184,337
Part-time and temporary positions	44,550	55,350	49,493
Regular pay in excess of 52-week base	661	827	700
Payment above basic rates	27		
Total personal services	204,563	228,734	234,530

Obligations by objects—Continued

Object classification	1952 actual	1953 estimate	1954 estimate
ALLOCATION TO BUREAU OF LAND MANAGEMENT—Continued			
02 Travel	$50,708	$55,600	$53,310
03 Transportation of things	1,614	1,800	2,750
04 Communication services	2,095	2,200	2,000
05 Rents and utility services	2,261	2,389	1,200
06 Printing and reproduction	1,449	1,600	1,600
07 Other contractual services	8,434	12,300	10,000
08 Supplies and materials	28,832	44,800	23,510
09 Equipment	33,856	34,600	21,100
Total direct obligations	333,812	384,123	350,000
Obligations Payable Out of Reimbursements From Other Accounts			
08 Supplies and materials	$13,168		
Total obligations	346,980	$384,123	$350,000
ALLOCATION TO BUREAU OF MINES			
Total number of permanent positions	42	40	35
Full-time equivalent of all other positions	2	2	2
Average number of all employees	34	33	31
Average salaries and grades:			
General schedule grades:			
Average salary	$4,859	$4,802	$4,973
Average grade	GS–7.4	GS–7.3	GS–7.5
Crafts, protective, and custodial grades:			
Average salary	$3,205	$3,295	$3,385
Average grade	CPC–6.0	CPC–6.0	CPC–6.0
Ungraded positions: Average salary	$2,683	$2,700	$2,720
01 Personal services:			
Permanent positions	$136,089	$138,911	$131,642
Part-time and temporary positions	4,365	3,500	3,200
Regular pay in excess of 52-week base	514	524	508
Total personal services	140,968	142,935	135,350
02 Travel	7,699	8,288	6,800
03 Transportation of things	929	412	300
04 Communication services	142	163	140
05 Rents and utility services	285	300	160
06 Printing and reproduction	744	659	450
07 Other contractual services	686	700	400
08 Supplies and materials	5,687	6,143	4,400
09 Equipment	4,205	2,900	1,600
15 Taxes and assessments	509	438	400
Total obligations	161,854	162,929	150,000
ALLOCATION TO FISH AND WILDLIFE SERVICE			
Total number of permanent positions	88	76	62
Full-time equivalent of all other positions	10	2	
Average number of all employees	94	71	62
Average salaries and grades:			
General schedule grades:			
Average salary	$4,347	$4,491	$4,730
Average grade	GS–6.5	GS–6.2	GS–7.7
Crafts, protective, and custodial grades:			
Average salary	$2,763	$2,763	$2,880
Average grade	CPC–4.0	CPC–4.0	CPC–3.0
01 Personal services:			
Permanent positions	$376,151	$317,104	$292,930
Part-time and temporary positions	26,736	5,500	
Regular pay in excess of 52-week base	1,695	1,221	896
Payment above basic rates	826	575	264
Total personal services	405,408	324,400	294,090
02 Travel	34,970	32,000	29,500
03 Transportation of things	979	950	1,100
04 Communication services	3,502	3,150	1,900
05 Rents and utility services	1,510	1,500	600
06 Printing and reproduction	1,680	1,500	1,200
07 Other contractual services	19,462	18,500	10,000
08 Supplies and materials	14,628	13,900	9,650
09 Equipment	3,766	3,500	1,740
15 Taxes and assessments	716	600	220
Total obligations	486,621	400,000	350,000

Obligations by objects—Continued

Description	1952 actual	1953 estimate	1954 estimate
ALLOCATION TO GEOLOGICAL SURVEY			
Total number of permanent positions	578	563	500
Full-time equivalent of all other positions	104	97	79
Average number of all employees	620	626	547
Average salaries and grades:			
General schedule grades:			
Average salary	$4,395	$4,451	$4,401
Average grade	GS–6.5	GS–6.6	GS–6.5
01 Personal services:			
Permanent positions	$2,174,369	$2,250,000	$2,050,000
Part-time and temporary positions	283,550	280,000	237,000
Regular pay in excess of 52-week base	9,332	8,400	8,000
Payment above basic rates	46,257	6,600	5,000
Payments to other agencies for reimbursable details	127		
Total personal services	2,513,635	2,545,000	2,300,000
02 Travel	282,639	280,000	245,000
03 Transportation of things	19,365	18,000	15,000
04 Communication services	15,787	14,000	13,000
05 Rents and utility services	27,542	17,000	17,000
06 Printing and reproduction	24,559	26,000	25,000
07 Other contractual services	327,126	270,000	275,000
Services performed by other agencies	26,671	27,000	25,000
08 Supplies and materials	225,842	226,631	210,000
09 Equipment	267,457	180,000	170,000
15 Taxes and assessments	6,784	7,000	5,000
Subtotal	3,737,407	3,610,631	3,300,000
Deduct charges for quarters and subsistence	425		
Total obligations	3,736,982	3,610,631	3,300,000
ALLOCATION TO NATIONAL PARK SERVICE			
Summary of Personal Services			
Total number of permanent positions	35	33	32
Average number of all employees	36	32	31
Average salaries and grades:			
General schedule grades:			
Average salary	5,160	5,160	5,257
Average grade	GS–8.1	GS–7.9	GS–7.9
Personal service obligations:			
Permanent positions	$182,824	$163,344	$160,235
Part-time and temporary positions	96	1,600	1,600
Regular pay in excess of 52-week base	706	630	616
Payment above basic rates	22		
Total personal service obligations	183,648	165,574	162,451
Direct Obligations			
01 Personal services	175,010	165,574	162,451
02 Travel	12,699	17,766	9,760
03 Transportation of things	30	1,065	400
04 Communication services	1,984	2,630	1,400
05 Rents and utility services	1,781	2,500	1,800
06 Printing and reproduction	1,867	8,600	1,500
07 Other contractual services	48,312	46,290	1,000
Services performed by other agencies	148,065	136,359	117,000
08 Supplies and materials	3,455	6,140	3,289
09 Equipment	1,082	8,475	1,400
15 Taxes and assessments	306		
Total direct obligations	394,591	395,399	300,000
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services	8,638		
15 Taxes and assessments	9		
Total obligations payable out of reimbursements from other accounts	8,647		
Total obligations	403,238	395,399	300,000

Obligations by objects—Continued

Description	1952 actual	1953 estimate	1954 estimate
ALLOCATION TO BUREAU OF INDIAN AFFAIRS			
Total number of permanent positions	69	66	65
Full-time equivalent of all other positions	4	3	
Average number of all employees	67	60	56
Average salaries and grades:			
General schedule grades:			
Average salary	$4,711	$4,776	$4,915
Average grade	GS–7.0	GS–7.0	GS–7.0
Direct Obligations			
01 Personal services:			
Permanent positions	$298,760	$279,489	$275,690
Part-time and temporary positions	4,886	7,680	
Regular pay in excess of 52-week base	1,150	1,075	1,060
Total personal services	304,796	288,244	276,750
02 Travel	25,376	35,750	14,300
03 Transportation of things	603	385	100
04 Communication services	1,304	2,682	450
05 Rents and utility services	2,543	8,600	3,000
06 Printing and reproduction	1,099	4,000	400
07 Other contractual services	3,043	5,522	1,000
08 Supplies and materials	8,966	15,083	2,000
09 Equipment	4,433	20,050	2,000
15 Taxes and assessments	729		
Total direct obligations	352,892	380,316	300,000
Obligations Payable Out of Reimbursements From Other Accounts			
07 Other contractual services	543		
Total obligations	353,435	380,316	300,000
SUMMARY			
Summary of Personal Services			
Total number of permanent positions	14,196	11,832	10,228
Full-time equivalent of all other positions	259	264	213
Average number of all employees	10,802	10,106	9,223
Average salaries and grades:			
General schedule grades:			
Average salary	$4,402	$4,586	$4,625
Average grade	GS–6.4	GS–6.8	GS–6.9
Crafts, protective, and custodial grades:			
Average salary	$3,151	$3,143	$3,164
Average grade	CPC–4.8	CPC–4.6	CPC–4.4
Ungraded positions: Average salary	$3,847	$3,790	$3,846
Personal service obligations:			
Permanent positions	$46,595,994	$44,667,783	$41,081,037
Part-time and temporary positions	805,980	884,538	752,950
Regular pay in excess of 52-week base	190,110	183,277	172,816
Payment above basic rates	1,065,028	1,027,674	835,072
Payment to other agencies for reimbursable details	127		
Total personal service obligations	48,657,239	46,763,272	42,841,875
Direct Obligations			
01 Personal services	48,475,039	46,241,377	42,225,875
02 Travel	1,794,643	1,975,693	1,693,733
03 Transportation of things	3,455,430	2,963,774	2,857,586
04 Communication services	594,024	632,545	564,256
05 Rents and utility services	837,437	809,702	692,674
06 Printing and reproduction	188,112	279,857	239,873
07 Other contractual services	2,208,872	3,499,702	5,988,759
Services performed by other agencies	961,692	1,025,260	977,955
08 Supplies and materials	15,278,972	20,108,928	9,975,641
09 Equipment	2,932,493	5,014,786	5,799,966
10 Lands and structures	115,150,333	133,255,378	134,300,455
11 Grants, subsidies, and contributions	267,646	29,500	7,500
13 Refunds, awards, and indemnities	13,607	44,262	95,719
15 Taxes and assessments	94,391	103,014	101,497
Subtotal	192,312,691	215,983,778	205,521,489
Deduct charges for quarters and subsistence	924,355	884,183	702,842
Total direct obligations	191,388,336	215,099,595	204,818,647

Obligations by objects—Continued

Description	1952 actual	1953 estimate	1954 estimate
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services	$182,209	$521,895	$616,000
02 Travel	2,893	2,060	100
03 Transportation of things	−1,160		
04 Communication services	527	500	
05 Rents and utility services	4,467	1,752	900
07 Other contractual services	161,100	11,754	3,000
08 Supplies and materials	56,873	20,179	10,000
09 Equipment	101,808	110,000	50,000
10 Lands and structures	1,213,732	196,697	395,000
15 Taxes and assessments	9		
Total obligations payable out of reimbursements from other accounts	1,722,449	864,837	1,075,000
Total obligations	193,110,785	215,964,432	205,893,647

Analysis of expenditures

	1952 actual	1953 estimate	1954 estimate
Unliquidated obligations, start of year	$103,366,830	$76,169,284	$95,893,461
Obligations incurred during the year	193,110,785	216,927,014	205,893,647
	296,477,615	293,096,298	301,787,108
Deduct:			
Reimbursable obligations	1,846,255	864,837	1,075,000
Obligations transferred to "Construction and rehabilitation (liquidation of contract authorization), Bureau of Reclamation"	1,000,000		
Unliquidated obligations, end of year	76,169,284	95,893,461	107,513,108
Adjustment in obligations of prior years	19,392		
Total expenditures	217,442,684	196,338,000	193,199,000
Expenditures are distributed as follows:			
Out of current authorizations	217,442,684	99,903,000	109,076,000
Out of prior authorizations		96,435,000	84,123,000

INFORMATION SCHEDULES

NOTE.—The schedule of "Obligations by activities" shown above reflects the obligations by projects, including those from carry-over balances as well as those from new appropriations. The first of the following informational schedules shows by projects the allocations of the new appropriations for 1952 and 1953 and the estimates for 1954. The second table shows by projects the unobligated balances of the funds available at the end of 1952 together with their application in 1953.

OPERATION AND MAINTENANCE

Amounts available for obligation

	1952 actual	1953 estimate	1954 estimate
Appropriation or estimate:			
Reclamation fund, special fund	$12,476,494	$14,940,450	$19,415,290
Colorado River Dam fund	1,671,000	2,143,000	2,179,710
General fund	1,830,100	1,916,550	3,205,000
Total appropriation or estimate	15,977,594	19,000,000	24,800,000
Reimbursements from non-Federal sources	1,934,231	2,227,940	2,235,183
Reimbursements from other accounts	8,464	500	
Total available for obligation	17,920,289	21,228,440	27,035,183
Unobligated balance, estimated savings	−23,168		
Unobligated balance, returned to unappropriated receipts	−952,937	−154,040	
Obligations incurred	16,944,184	21,074,400	27,035,183
Comparative transfers from "Construction and rehabilitation, Bureau of Reclamation"		962,582	
Total obligations	16,944,184	22,036,982	27,035,183

NOTE:—Reimbursements from non-Federal sources shown above are from water users for operation and maintenance (Interior Department Appropriation Act, 1953).

Obligations by activities

Description	1952 actual	1953 estimate	1954 estimate
Direct Obligations			
1. Imperial Dam, Arizona-California		$60,000	$60,000
2. Yuma project, Arizona-California	$289,811	244,290	217,394
3. Boulder Canyon project, Arizona-California-Nevada	1,545,050	1,577,697	1,654,710
4. Boulder City, Nev		590,000	525,000
5. Colorado River front work and levee system, Arizona-California-Nevada	1,120,398	1,083,450	1,425,000
6. Parker-Davis project, Arizona-California-Nevada	2,174,756	2,268,000	2,502,710
7. Central Valley project, California	2,412,158	3,349,750	4,608,413
8. Orland project, California	109,543	119,530	119,530
9. All-American Canal system, Imperial division, Boulder Canyon project, California-Arizona	4,337	40,600	39,300
10. Klamath project, California-Oregon	561,167	570,000	570,000
11. Colorado-Big Thompson project, Colorado	862,912	445,200	775,410
12. Mancos project, Colorado	6,424	7,650	8,000
13. Pine River project, Colorado	6,300	6,600	9,000
14. San Luis Valley project, Colorado		9,300	12,000
15. Boise project, Idaho-Oregon	384,361	588,900	579,260
16. Rathdrum Prairie project, Post Falls unit, Idaho-Washington	2,522	2,800	3,000
17. Minidoka project, Idaho-Wyoming	342,884	456,000	461,000
18. Hungry Horse project, Montana		195,100	342,940
19. Milk River project, Montana	108,801	110,000	110,000
20. Missoula Valley project, Big Flat unit, Montana	2,040	2,500	2,500
21. Sun River project, Greenfields division, Montana	4,693	4,777	4,924
22. North Platte project, Nebraska-Wyoming	314,254	321,400	310,200
23. Carlsbad project, New Mexico	12,078	11,000	11,000
24. Middle Rio Grande project, New Mexico			108,000
25. Rio Grande project, New Mexico-Texas	1,762,442	2,210,300	2,232,594
26. W. C. Austin project, Oklahoma	177,088	104,221	8,060
27. Deschutes project, north unit, Oregon	178,619	193,000	201,500
28. Umatilla project, Oregon	9,791	11,000	11,100
29. Vale project, Oregon	4,520	4,600	4,725
30. Owyhee project, Oregon-Idaho	359,498	95,500	102,000
31. Belle Fourche project, South Dakota	5,000	2,635	
32. Rapid Valley project, South Dakota	4,862	5,100	5,000
33. Balmorhea project, Texas	[1]—20		
34. Provo River project, Utah	9,298	10,500	10,500
35. Columbia Basin project, Washington	2,060,692	3,109,000	3,682,900
36. Yakima project, Washington	521,057	525,000	550,000
37. Eden project, Wyoming			15,000
38. Kendrick project, Wyoming	397,332	130,000	122,170
39. Riverton project, Wyoming	188,679	171,600	127,400
40. Shoshone project, Wyoming-Montana	262,653	191,400	186,200
41. Soil and moisture-conservation operations	736,534	859,000	940,000
42. Missouri River Basin and transmission facilities operated for other projects		2,348,082	3,576,743
43. Cooperative program with Department of Agriculture			800,000
44. Unobligated balance of advances to chief engineer, Denver, Colo., and centralized project activities in the regional offices	−6,814		
Total direct obligations	16,935,720	22,036,482	27,035,183
Obligations Payable Out of Reimbursements From Other Accounts			
3. Boulder Canyon project, Arizona-California-Nevada	858		
6. Parker-Davis project, Arizona-California-Nevada	519		
7. Central Valley project, California	1,332		
27. Deschutes project, north unit, Oregon	376		
35. Columbia Basin project, Washington	77		
39. Riverton project, Wyoming	5,302		
41. Soil and moisture conservation operations		500	
Total obligations payable out of reimbursements from other accounts	8,464	500	
Total obligations	16,944,184	22,036,982	27,035,183

[1] The negative amount shown for this project represents an adjustment of actual obligations properly chargeable to the project and reported in prior years on the basis of estimates.

Obligations by objects

Object classification	1952 actual	1953 estimate	1954 estimate
BUREAU OF RECLAMATION			
Summary of Personal Services			
Total number of permanent positions	3,362	3,497	3,922
Full-time equivalent of all other positions	83	77	111
Average number of all employees	2,933	3,578	4,085
Average salaries and grades:			
General schedule grades:			
Average salary	$4,294	$4,442	$4,541
Average grade	GS–6.2	GS–6.3	GS–6.4
Crafts, protective, and custodial grades:			
Average salary	$3,379	$3,469	$3,507
Average grade	CPC–5.4	CPC–5.4	CPC–5.4
Ungraded positions: Average salary	$3,605	$3,776	$3,848
Personal service obligations:			
Permanent positions	$10,990,451	$14,125,244	$16,332,922
Part-time and temporary positions	242,789	235,673	344,847
Regular pay in excess of 52-week base	42,494	50,579	58,725
Payment above basic rates	319,193	323,372	355,956
Total personal service obligations	11,594,927	14,734,868	17,092,450
Direct Obligations			
01 Personal services	11,594,093	14,734,868	17,092,450
02 Travel	249,655	261,839	297,625
03 Transportation of things	80,136	105,483	113,000
04 Communication services	95,760	124,609	130,485
05 Rents and utility services	224,008	343,926	339,493
06 Printing and reproduction	13,379	19,056	25,402
07 Other contractual services	1,382,587	1,649,544	2,308,096
Services performed by other agencies	227,421	167,150	248,460
08 Supplies and materials	2,387,080	3,642,854	4,195,609
09 Equipment	600,537	651,893	889,006
10 Lands and structures	564,792	705,655	1,017,352
13 Refunds, awards, and indemnities	7,419	2,213	2,488
15 Taxes and assessments	27,411	36,798	42,133
Subtotal	17,454,278	22,445,888	26,701,609
Deduct charges for quarters and subsistence	518,558	409,406	466,426
Total direct obligations	16,935,720	22,036,482	26,235,183
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services	834		
07 Other contractual services	6,772		
08 Supplies and materials	858	350	
09 Equipment		150	
Total obligations payable out of reimbursements from other accounts	8,464	500	
Total obligations	16,944,184	22,036,982	26,235,183
ALLOCATION TO DEPARTMENT OF AGRICULTURE			
Total number of permanent positions			142
Full-time equivalent of all other positions			25
Average number of all employees			151
Average salaries and grades:			
General schedule grades:			
Average salary			$4,163
Average grade			GS–6.6
01 Personal services:			
Permanent positions			$523,290
Part-time and temporary positions			64,060
Regular pay in excess of 52-week base			2,000
Total personal services			589,350
02 Travel			33,800
03 Transportation of things			7,000
04 Communication services			3,200
05 Rents and utility services			7,900
06 Printing and reproduction			7,500
07 Other contractual services			29,500
Services performed by other agencies			1,000
08 Supplies and materials			30,400
09 Equipment			88,450
15 Taxes and assessments			1,900
Total obligations			800,000

Obligations by objects—Continued

Object classification	1952 actual	1953 estimate	1954 estimate
SUMMARY			
Summary of Personal Services			
Total number of permanent positions	3,362	3,497	4,064
Full-time equivalent of all other positions	83	77	136
Average number of all employees	2,933	3,578	4,236
Average salaries and grades:			
General schedule grades:			
Average salary	$4,294	$4,442	$4,504
Average grade	GS-6.2	GS-6.3	GS-6.4
Crafts, protective, and custodial grades:			
Average salary	$3,379	$3,469	$3,507
Average grade	CPC-5.4	CPC-5.4	CPC-5.4
Ungraded positions: Average salary	$3,605	$3,776	$3,848
Personal service obligations:			
Permanent positions	$10,990,451	$14,125,244	$16,856,212
Part-time and temporary positions	242,789	235,673	408,907
Regular pay in excess of 52-week base	42,494	50,579	60,725
Payment above basic rates	319,193	323,372	355,956
Total personal service obligations	11,594,927	14,734,868	17,681,800
Direct Obligations			
01 Personal services	11,594,093	14,734,868	17,681,800
02 Travel	249,655	261,839	331,425
03 Transportation of things	80,136	105,483	120,000
04 Communication services	95,760	124,609	133,685
05 Rents and utility services	224,008	343,926	347,393
06 Printing and reproduction	13,379	19,055	32,902
07 Other contractual services	1,382,587	1,649,544	2,337,596
Services performed by other agencies	227,421	167,150	249,460
08 Supplies and materials	2,387,080	3,642,854	4,226,009
09 Equipment	600,537	651,893	977,456
10 Lands and structures	564,792	705,655	1,017,362
13 Refunds, awards, and indemnities	7,419	2,213	2,488
15 Taxes and assessments	27,411	36,798	44,033
Subtotal	17,454,278	23,445,888	27,501,609
Deduct charges for quarters and subsistence	518,558	409,406	466,426
Total direct obligations	16,935,720	22,036,482	27,035,183
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services	834		
07 Other contractual services	6,772		
08 Supplies and materials	858	350	
09 Equipment		150	
Total obligations payable out of reimbursements from other accounts	8,464	500	
Total obligations	16,944,184	22,036,982	27,035,183

Analysis of expenditures

	1952 actual	1953 estimate	1954 estimate
Unliquidated obligations, start of year	$3,624,821	$2,971,129	$4,223,089
Obligations incurred during the year	16,944,184	21,074,400	27,035,183
	20,569,005	24,045,529	31,258,272
Deduct:			
Reimbursable obligations	1,942,695	2,228,440	2,235,183
Adjustment in obligations of prior years	236,287		
Unliquidated obligations, end of year	2,971,129	4,223,089	7,172,089
Total expenditures	15,418,894	17,594,000	21,851,000
Expenditures are distributed as follows:			
Out of current authorizations	13,056,846	15,010,000	18,960,000
Out of prior authorizations	2,362,048	2,584,000	2,891,000

Mr. JENSEN. Turning to project construction.

Mr. LINEWEAVER. Mr. Markwell will lead off on that item.

CONSTRUCTION AND REHABILITATION

GENERAL STATEMENT

Mr. MARKWELL. Mr. Chairman, I have a general statement on construction. Do you want me to put it in the record and summarize it?

Mr. JENSEN. I think so.

(The statement submitted by Mr. Markwell follows:)

GENERAL STATEMENT, CONSTRUCTION

Progress during the first half of the fiscal year in terms of expenditures to which the Bureau was committed has been noticeably improved over that of recent years. Two primary factors contributing to this accomplishment record are the outstanding performance of a few contractors and the unusually favorable fall weather conditions at many construction sites. The expeditious prosecution of the work by a few contractors, however, is threatened by inadequate fund allotments. Such fund exhaustion threats prevail at Tiber, Palisades, and Pactola Dams.

On January 1, 1953, construction contracts in force had a total face value of $263 million. Important works under construction during the first 6 months of fiscal year 1953 included 3 concrete dams, 14 earth dams, 10 powerplants, and 10 tunnels. Other construction work, including aqueduct and trunk pipeline construction, open canals, concrete pipeline irrigation distribution systems, open lateral systems, and transmission lines, was in progress. In the first half of this fiscal year 8 dams were completed with an aggregate storage capacity of 4 million acre-feet. They involve 3,100,000 cubic feet of concrete and nearly 6,500,000 cubic yards of earth; also several tunnels were completed at a total length of slightly over 18 miles.

During the remainder of fiscal year 1953 it is expected that practically all of the work scheduled will be completed as programed. This will include continuation of construction work similar to that already under way and the initiation of construction on several dams, a power plant and a tunnel as well as work on canal and distribution system facilities. This activity will result in the completion of 2 more dams and 1 tunnel during the remainder of fiscal year 1953. Fiscal year 1953 activities will provide irrigation facilities for an additional 246,500 acres of land and an increased installed generating capacity of 352,500 kilowatts.

In fiscal year 1954 construction work will continue on 41 projects and 19 units of the Missouri River Basin project as well as preconstruction operations on authorized work not now approved for construction. This continuing work provides for the completion of five projects during the fiscal year. Major features on which construction operations are involved include 23 dams, 15 powerplants, 5 tunnels, many canals and distribution systems, and transmission lines, and will provide for the completion of 10 dams, 3 power plants with increased generating capacity of 207,500 kilowatts and irrigation facilities for an additional 279,400 acres during fiscal year 1954.

The rehabilitation and betterment of existing projects involves primarily the replacement of obsolete or deteriorated structures and equipment on the older irrigation projects to preserve or restore them to a satisfactory and efficient operating condition. The fiscal year 1954 rehabilitation program consists of the start of work on 1 project and continuing work on 9 projects, 3 of which will be completed.

We will have 417 major contracts in force on June 30, 1953, with a value of about $325,000,000. In fiscal year 1954 it is estimated 466 additional major contracts will be awarded with a total face value of about $150,000,000. Earnings on these contracts will require over $154,000,000 during fiscal year 1954 of which over $112,000,000 will be for earnings during fiscal year 1954 on contracts in force June 30, 1953, and over $42,000,000 for contracts to be awarded during fiscal year 1954. Funds are necessary to fulfill our obligations under these contracts in order to maintain the progress represented by them and our program.

Our recent experiences in construction activities indicate that construction contractors' cost may be fairly stable for several months with rising labor costs offset by slightly lower equipment and materials costs. Consequently, the Bureau of Reclamation may expect to enjoy somewhat lower average prices than have prevailed. Prospects also appear reasonable for at least the next few months for increased competition for our construction work and somewhat lower prices for materials. Further, it is not expected that difficulties we have experienced in the past few years in obtaining some materials will be a problem since nearly all materials are expected to be in good supply during the coming year.

Mr. MARKWELL. Our progress this year has been exceptionally good, largely because of favorable weather conditions and better performance by contractors.

In January 1, 1953, we had construction contracts in force of $263 million. By the end of the year we will have 417 major contracts in force, with a value of about $325 million. That is to carry forward the projects for which appropriations have already been made.

On some of the projects the contractors have been able to make rather exceptional progress, and as we come to the individual projects I think Mr. Lineweaver will explain the situation with respect to the advantages of utilizing some funds for projects which have not been able to go ahead, on the projects that have made progress. There is one project which we may be able to finish a year ahead of time, thus cutting down on administrative costs and realizing the project's great benefits.

This is a summary of my statement.

I might add that our analysis of construction cost trends indicates that while labor prices are still continuing to rise, there is a leveling off, in fact a decrease, in some material costs. There appears to be an increase in efficiency and an increase in number of bidders on our projects as compared to last year. We seem to be reaching a plateau on the construction cost curves at the present time, but I would not place too much confidence in this apparent trend.

Mr. JENSEN. You mean you are leveling off? Is that what you mean by a plateau?

Mr. MARKWELL. Yes, sir. I have a tabulation here.

CANADIAN RIVER PROJECT

Mr. BUDGE. Mr. Chairman, while we are waiting for that, Mr. Lineweaver did you have other remarks you wanted to make in regard to the Canadian River project in Texas?

Mr. LINEWEAVER. Yes. In regard to your question this morning as to how we could operate with advance planning funds and also construction funds, I would like to submit a brief statement showing there is no contradiction in the statements I made of the thoroughness of investigation and ability to start construction on a division of the project under investigation.

(The matter referred to follows:)

USE OF INVESTIGATION AND CONSTRUCTION FUNDS ON BUREAU OF RECLAMATION PROJECTS

After a project is authorized for construction, detailed surveys and studies must be made and definite final plans and designs and specifications prepared in order to make the project ready for the start of the actual construction. It may require a year's work, or even 2 or 3 years' work after authorization to evolve definite plans, complete detailed designs and to accomplish related preconstruction work

that must be done before the actual construction can start on the project. In recent years these investigations to perfect the definite plan of the project and to prepare the final designs and specifications for the initial unit or features to be placed under construction have been made with funds appropriated for general investigations under the activity heading of "Advance planning." General Investigations funds are used for this purpose only until appropriations for construction and rehabilitation are made available for the project or initial unit thereof.

Even after appropriations for construction and rehabilitation are made to the project and construction is started on the initial features, normally there remains considerable preconstruction work to do which is in progress at the same time that construction is progressing on the initial features. A project may have several dams, reservoirs, power plants, tunnels, conduits, and other engineering works in the plan of development and construction may be in progress on one or several features of the project, and at the same time the detailed surveys and the preparation of final designs and specifications may be in progress for other features of the project, to be constructed later.

For example, on the Colorado-Big Thompson project, the Alva B. Adams tunnel, a 13-mile-long tunnel to divert water from the Colorado River Basin on the western slope of the Continental Divide to the Missouri River Basin on the eastern slope, being the key structure of the project, was placed under construction and practically completed before final designs and specifications were started on some of the project features on the eastern slope, which are the last features to be placed under construction.

This procedure is followed because the making of all detailed preconstruction surveys and the preparing of all final designs and specifications before any construction is started would unnecessarily delay the start of construction of a project.

In the Canadian River project the key feature is the Sanford Dam and Reservoir, which after approval of the definite plan for the project, could be placed under construction (if construction funds were made available) and at the same time detailed surveys and final designs and specifications could proceed for other features of the project to be constructed later.

COST TRENDS

Mr. MARKWELL. I understand you cannot include this chart in the record, but the heavy black line indicates construction-cost trends since 1940. You will note it was turning downward before the Korean war, went up, and it is now apparently leveling off. I emphasize "apparently" leveling off.

Mr. JENSEN. What is the percentage of increase in cost of construction since the close of World War II in 1945 on all construction under the Bureau of Reclamation?

Mr. MARKWELL. Based upon 1940 prices as 100, at the end of 1945 the index stood fairly level at about 165. It is now fairly level at about 241.

Mr. JENSEN. What percent of increase in cost of construction would that be?

Mr. MARKWELL. Since the end of the war it would be around 50 percent, I would say.

Mr. JENSEN. You say it stood at what at the end of the war in 1945?

Mr. MARKWELL. In 1945 the index, based on 1940 prices as 100, was about 165.

Mr. JENSEN. And now?

Mr. MARKWELL. About 241.

Mr. JENSEN. Taking 165 from 241 leaves 76 percent. If we would divide 76 by 165——

Mr. MCPHAIL. About 46 percent, Mr. Chairman.

Mr. JENSEN. That is for all of your projects?

Mr. MARKWELL. That is the average.

MULTIPURPOSE DAM CONSTRUCTION

Mr. JENSEN. Turning to multipurpose dam construction, which necessitates the installation of hydroelectric machinery, generating plants, everything pertaining to the generation of power and transmission, substations and transformers, and all that, what has been the increase in cost on that?

Mr. MARKWELL. Our index is not broken down in that particular fashion. I can summarize it for the record. Our index is broken down under earth dams, concrete dams, pumping plants, canals and conduits, laterals and drains, powerplants, transmission systems, roads, and bridges.

Mr. JENSEN. After making some study regarding the increased cost of hydroelectric power generating machinery and related facilities, and transmission construction and related facilities, my information was that those materials had risen approximately 75 percent during the past 7 years. I would like very much to have that broken down so that we will know where we are at so far as the cost of hydroelectric machinery and related facilities are concerned, because we have a problem facing us on these high construction costs today in relation to rates which have been proposed for hydroelectric power. I think it is only right and proper that we should know these facts so that the Congress of the United States can comply with the laws which govern the building of these great projects.

Mr. MARKWELL. As a rough calculation based upon the powerplants themselves, sir, our charts indicate about 70 percent, but I will supply the details later.

(The information requested is as follows:)

Cost indexes for construction reclamation work

[1940=1.00]

	Index		Price increase, 1945–53
	January 1945	January 1953	
			Percent
Dams:			
Earth	1.80	2.18	21.0
Concrete	1.60	2.25	41.0
Pumping plants:			
Building and equipment	1.36	2.41	77.0
Structures and improvements [1]	1.62	2.73	68.5
Equipment	1.10	2.21	100.0
Pumps and prime movers		2.29	
Accessory electric and miscellaneous equipment		2.08	
Discharge pipes		2.65	
Canals and conduits:			
Canals	1.80	2.55	41.5
Conduits (tunnels, free-flow, concrete-lined)		2.56	
Laterals and drains	1.85	2.75	49.0
Powerplants, hydro:			
Building and equipment	1.41	2.38	69.0
Structures and improvements [1]	1.67	2.67	60.0
Equipment	1.26	2.24	78.0
Turbines and generators		2.31	
Accessory electrical equipment		2.09	
Miscellaneous equipment		2.24	
Penstocks		2.66	
Transmission switchyards and substations	1.10	2.27	106.0
Transmission lines:			
Wood-pole, 115-kilovolt	1.45	2.89	99.0
Steel-tower 230-kilovolt		2.86	
Permanent general property buildings	1.40	2.58	84.5
Roads and bridges:			
Primary roads	1.60	2.38	48.5
Secondary roads, unsurfaced	1.70	2.34	37.5
Bridges (steel)	1.60	2.60	62.5
Composite index	1.61	2.40	49.9

[1] Indexes for structures and improvements on pumping plants and powerplants are based on a reinforced-concrete structure.

NOTE.—The above cost indexes for construction work are based on the combined costs of material and labor furnished by the contractor and material and labor furnished by the Government.

Source: Prepared by Bureau of Reclamation, Design and Construction Division, Denver, Colo.

Mr. JENSEN. 70 percent?

Mr. MARKWELL. And 46 percent is the average of the whole thing.

Mr. JENSEN. That entails every kind of construction. Heavy machinery costs, such as trucks, bulldozers, and things of that nature, have not risen in price to the degree that labor has.

Mr. MARKWELL. That is correct.

Based on the average of 1940, being 100, earth dams as of January 1953 are at the index price of 218. Powerplants, buildings, and equipment are at 238. Structures and improvements are at 267. Equipment is at 224. Turbines and generators are at 231. Accessory electrical equipment is at 209. And miscellaneous equipment is at 224. This tends to bear out your assumption.

Mr. JENSEN. Yes.

Mr. MARKWELL. This document also indicates—I do not think you would want to put it in the record, but I think it would be quite interesting to members of the committee—the average number of bids which we have been receiving on various types of contracts.

Mr. JENSEN. I think we will not put it in the record, but I would like to have you brief it at this time.

Mr. MARKWELL. For example, as a summary of bids received the fourth quarter of 1952:

Canals and laterals we received an average of 5.7 bids.
Miscellaneous canal and lateral structures, 5 bids.
Earth dams, 9 bids. That is reflected in this index, too.
Tunnels, 9.3 bids.
Transmission lines and substations, 8.3 bids per bid opening.
Powerplants, 8.0 bids.
Pipelines and structures, 6.0 bids.
Miscellaneous, 4.5 bids.

Mr. JENSEN. I would say that compares favorably with bids for private construction on the number of bids.

Mr. MARKWELL. Yes. We are receiving many more bids now than we did in 1950 and in 1951, but not as many bids as we received prior to the Korean war. The tendency now is toward more competition.

AGGREGATE AND CEMENT

Mr. JENSEN. Since we are into that, there is a matter which has concerned me to some degree, and that is the matter of the Bureau of Reclamation furnishing cement, for instance, and aggregate, for the contractors.

The Bureau of Reclamation, generally speaking, has always in the past, or at least for a number of years, let a contract with a stipulation in the contract that the Bureau of Reclamation would furnish all the necessary cement and aggregate for the concrete to be used in the dam, and hence the contractor did not include in his contract those items.

I have never yet had a satisfactory answer as to why that was done, why the contractor was not obliged to do for the Government what he would do if he bid on a private contract, and that is to furnish all the material and all the labor and everything that went into that particular structure.

Mr. MARKWELL. I think the answer to that is fairly simple, Mr. Jensen. At one time it was felt that it was advantageous to the Bureau, principally because of the low Government freight rates on the land-grant railroads in the West, to buy such things as reinforcing steel and cement, as well as the specialized equipment which went into a dam, and furnish that to the contractor at the siding. It would be the responsibility of the contractor to take it there, warehouse it, and put it on the job. That was back in the days when we could be assured of reasonably prompt delivery, and we could schedule the arrival of our materials to coincide with the contractor's schedule.

Since the war, on the smaller jobs we have asked the contractors to furnish almost all materials incorporated in the job, unless it was a specialized valve or something of that kind; but for the structure itself, on the smaller jobs the contractor furnishes virtually all the materials.

We let a contract for a project like Hungry Horse, and the principal contract on that was about $42 million. The cement item alone was several million dollars additional. The other items also ran into several million dollars. In that case we furnished the cement because it was a sizable item, it would tie up the contractor's capital, and it would tie up his bonding capacity, and we felt, by reason of our negotiations for better freight rates and so on, we could work out a better deal, and we did.

Say it is a million-dollar contract. I do not think of any case at the present time where we furnished anything but the highly specialized, specially designed, materials. The contractor does a lock and key job.

So that it depends on the individual project, the circumstances surrounding it, and the particular materials or equipment which go into it.

Have I made myself clear?

Mr. JENSEN. Yes. But you know, I have never had too much faith in Government purchasing of a lot of things. I remember when we were at the Boysen Dam in 1948, the contractor said to me, "See what we are paying for cement," and I do not remember now what it was, but he stumbled when he said that cement laid down at the Boysen Dam was costing him so much, when I knew that that cement was being bought by the retail material dealers in the same locality, delivered at the depot in their respective towns, for less money. I could not understand it, and I do not understand it today, why that happened. The only excuse that was given me was that there was a scarcity of cement and that the cement plants could get any price they wanted to for cement.

Because of that it was necessary to pay a premium in order to get this cement for that job at Boysen Dam. You will remember we had a mountain slide there, and it was an emergency job to get the cement to use in that tunnel which was dug underneath quite a sizable mountain. There was a fault in the structure of the mountain, and it slid and pushed the tunnel to one side considerably.

Mr. MARKWELL. And it bent the steel.

Mr. JENSEN. Yes, indeed, it bent the steel, and it did everything.

It must have been because of the fact that someone who was furnishing cement to the Government felt that they had a chance there to rook the Government, and they did that very thing when, on the other hand, if it had been the contractor who had been a customer of many of the cement plants around over the country, and he had the job to do of purchasing that cement, that cement plant would not have dared to charge him more money than the going price, even though it was an emergency, because it would have known when it did that that the contractor's dealings with that firm would have been at an end.

Now, I do not know to what extent that abuse has been carried on, but I remember very distinctly that we raised quite a little Ned about it at that time, and possibly we stopped it.

Mr. MARKWELL. I think, Mr. Chairman, that occurred at a time when there was a cement shortage, and it may please Dr. Fenton to know that we had to go as far east as Pennsylvania to get cement in an emergency to keep from shutting down a job.

You do have a point, Mr. Chairman, that in a seller's market the seller can kick the Government around.

Mr. JENSEN. There is no question about it.

Mr. MARKWELL. The Government has no alternative at any time except to take the lowest bid that is qualified, regardless of whatever treatment it has had in the past. The private contractor does not have to do that.

Mr. JENSEN. Well, I hope that you get the names of these private concerns. As much as I am for private enterprise and fight for it from the peanut vendor to the biggest corporation in the United

States, if they are honest and honorable and do business on good business principles.

I do know that there are certain industries that do not hesitate to get more than they are entitled to, especially when they sell to Uncle Sam. I hope you get the names of those people who have done that because I would like to see them.

Mr. FENTON. Off the record.

(Discussion off the record.)

SOURCE AND APPLICATION OF FUNDS

Mr. JENSEN. I have here in my hand an explanatory table of the construction and rehabilitation of the Bureau of Reclamation, source and application of funds for the fiscal year 1953 program.

There is much information in this table, and there is an explanatory statement which goes with it, and without objection I would like to put this table in the record, which shows each project starting with Eklutna, the All-American Canal, Boulder Canyon, Colorado River front work, and right down the line, each project which was under construction in the fiscal year 1953, giving an estimate of the unobligated balance as of June 30, 1953, the proposed transfers of unobligated balances, and so on down the line. Without objection, we will place that in the record.

(The matter referred to follows:)

CONSTRUCTION AND REHABILITATION

SOURCE AND APPLICATION OF FUNDS FOR FISCAL YEAR 1953 PROGRAM

Explanation of table, October 9, 1952

The fiscal year 1953 construction budget provided that unobligated balances of prior year allotments to projects, estimated to be $21,660,813 at June 30, 1952, wou'd be used together with new appropriations to be made for fiscal year 1953 to finance the fiscal year 1953 program, and that such unobligated balances would be transferred among certain projects as required to meet the approved program. Columns 2 to 6 of the table show these amounts as contained in the budget and as they appear on pages 743–744 of the House hearings for fiscal year 1953.

During the progress of the fiscal year 1953 appropriation bill in the Congress, the committees were advised of the latest revised Bureau estimate of unobligated balances which were in excess of the original budgeted estimate of $21,660,813 shown in column 2. The House committee used $51,660,813, the Senate committee used $43,822,282, and the conference committee used the estimate of May 31, 1952, shown in column 9 and amounting to $46,517,222. Thus the amount finally agreed on by Congress for each project, as shown by column 7, consists of new funds plus that portion of the carryover that was not originally budgeted.

Column 7, "Amount approved by Congress," is taken from page 9 of Senate Report No. 1803 as modified by page 7 of Conference Report No. 2451. This column includes the new funds allowed plus $24,856,409 which is the additional unobligated balance estimated to be available on June 30, 1952.

In order to obtain the total program approved by Congress, it is therefore necessary to add to the amounts in column 7, the unobligated balance of $21,660,813 estimated in the budget and shown in column 4, and subtract funds amounting to $847,609 which were reserved on 2 projects for use in fiscal year 1954. This result is shown in column 8 and totals $223,440,604, consisting of $177,797,991 in new appropriation and $45,642,613 in unob'igated balances. The unobligated balance of $45,642,613 plus the amount of $874,609 reserved for fiscal year 1954 is equal to the amount used in the conference report of $46,517,222 shown in column 9.

Column 10 shows the actual unobligated balance of prior year allotments remaining on the books of each project at June 30, 1952. This amount is $47,935,433 as compared to the May 31 estimate of $46,517,222 (column 9) used by the con-

fercees in determining the new funds to be appropriated, and the $21,660,813 estimate (column 2) used at the time the budget was prepared.

Column 12 shows the approved obligation program for each project as it was determined in July 1952. This column reflects the changes made from the amounts shown in the budget program (column 6) as a result of the use of actual unobligated balances on June 30, 1952, changes desired by Congress, and adjustments to progress estimates that developed between the time the budget was prepared and the passage of the appropriation act.

In order to determine that portion of the new fiscal year 1953 allotment to each project that would be out of the fiscal year 1953 appropriation (column 11), it was necessary to compute each project amount in a series of steps, as follows:

(*a*) New construction starts were assumed to receive new funds as earmarked by the conference committee and shown on page 10 of Senate Report No. 1803.

(*b*) Projects shown by the budget to be financed entirely from prior-year allotments, and for which no new funds were requested, were assumed to have all prior year funds on hand or by transfer of prior-year balances from other projects as proposed in the budget justifications.

(*c*) Projects having prior year balances equal to, or in excess of, their 1953 program were assumed to use all prior year funds. No new funds required.

(*d*) Projects for which the advance estimate of unobligated balances, as shown in Colum 9, were zero, exclusive of (*a*) and (*b*) above. Actual balances developing on these projects were not included in the $46,517,222 total used by the Congress in determining the amount of the new appropriation. This group consists of three projects and each was assumed to receive new funds equal to the amount approved by Congress (column 7), Eklutna, Colorado-Big Thompson, and W. C. Austin.

(*e*) Projects for which transfers were not proposed in the budget were assumed to receive new funds as required to meet the approved program.

(*f*) On projects wherea new allotment was required and a transfer of prior year balances from other projects was budgeted, it was assumed that the new funds were equal to the new allotment minus the budgeted transfer.

(*g*) On projects where no transfers were anticipated, and unobligated balances were budgeted, the total program approved by Congress (column 8) was reduced by the estimate of unobligated balance used by Congress (column 9) to obtain the new appropriation required.

Source and application of funds (obligations) for fiscal year 1953 program

(1)	Budget estimate submitted to Congress					Amount approved by Congress	Total program approved by Congress	Estimate of unobligated balance, May 31, 1952	Actual unobligated balance June 30, 1952	New funds appropriated	Approved program	Fiscal year 1953 allotment	
	Estimate of unobligated balance, June 30, 1952	Proposed transfers of unobligated balance	Unobligated funds to be applied	New appropriations requested	Total program (obligations)							Total	Reserves for future years
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Eklutna	0	0	0	13,000,000	13,000,000	13,000,000	13,000,000	0	18,839	13,000,000	13,018,839	13,000,000	0
All-American Canal	1,209,362	0	1,209,362	420,000	1,509,987	1,419,000	2,628,362	1,407,133	1,417,475	1,221,229	2,434,298	1,419,000	402,177
Boulder Canyon	375,000	60,000	435,000	0	435,000	0	435,000	425,000	390,671	0	[1] 350,671	0	0
Colorado River front work	0	0	0	2,007,000	2,007,000	2,007,000	2,007,000	389,316	411,874	687,948	[2] 1,230,822	687,948	0
Davis Dam	1,528,661	0	1,528,661	1,754,000	3,282,661	1,754,000	3,282,661	3,490,000	3,916,877	554,330	4,471,207	554,330	0
Gila	0	0	0	5,582,000	5,582,000	5,582,000	5,582,000	1,605,975	1,454,173	5,582,000	7,036,173	5,582,000	0
Cachuma	0	2,230,000	2,230,000	6,270,000	8,500,000	6,270,000	8,500,000	1,620,000	1,656,782	4,650,000	8,500,000	6,880,000	36,782
Central Valley	5,498,808	(5,498,808)	0	40,000,000	40,000,000	38,780,000	38,780,000	11,096,331	10,421,516	32,327,642	26,996,431	26,756,922	10,182,007
Keru River	26,085	0	26,085	15,000	41,085	15,000	41,085	51,000	50,367	0	40,452	(9,915)	0
Kings River	35,556	(1,556)	34,000	0	34,000	0	34,000	53,556	55,880	0	9,000	(44,556)	2,324
Klamath	64,174	(64,174)	0	368,000	368,000	368,000	368,000	150,000	139,866	237,000	534,866	395,000	0
Solano	0	0	0	0	0	3,000,000	3,000,000	0	0	3,000,000	3,000,000	3,000,000	0
Colorado-Big Thompson	0	1,000,000	1,000,000	18,000,000	19,000,000	18,000,000	19,000,000	0	30,891	18,000,000	19,030,891	19,000,000	0
Paonia	208,476	(208,476)	0	0	0	0	0	208,476	210,898	0	170,000	(38,476)	2,422
San Luis Valley	525,163	(212,942)	312,221	0	312,221	0	312,221	575,000	575,755	0	261,955	(313,800)	0
Boise—Anderson Ranch Dam	276,058	0	276,058	0	276,058	0	276,058	276,058	411,778	0	411,778	0	0
Boise—Drainage (Kuna)	44,242	(39,242)	5,000	0	5,000	0	5,000	48,988	49,293	0	5,000	(44,293)	0
Boise—Payette	215,000	0	215,000	0	215,000	0	215,000	215,000	295,332	0	192,095	(103,237)	0
Lewiston Orchards	10,911	0	10,911	0	10,911	0	10,911	14,000	14,033	0	2,032	(12,000)	0
Minidoka—Gooding	36,153	(23,653)	12,500	0	12,500	0	12,500	36,153	37,813	0	6,000	(31,813)	0
Minidoka—North side pumping	0	0	0	0	0	150,000	150,000	0	0	150,000	[3] 285,245	180,153	0
Palisades	0	0	0	10,000,000	10,000,000	10,000,000	10,000,000	100,000	22,183	9,900,000	9,922,183	9,900,000	0
Buffalo Rapids No. 1	246,000	(246,000)	0	222,000	222,000	222,000	222,000	246,000	264,267	0	240,267	(24,000)	0
Buffalo Rapids No. 2	0	0	0	111,000	111,000	111,000	111,000	0	3,962	107,038	114,962	111,000	0
Fort Peck	321,000	0	321,000	0	321,000	0	321,000	1,066,000	887,879	0	421,879	(466,000)	0
Hungry Horse	0	0	0	13,245,000	13,245,000	13,245,000	13,245,000	50,000	106,821	12,570,000	12,676,821	12,570,000	0
Milk River	0	0	0	0	0	0	0	15,000	17,651	0	11,651	(6,000)	0
Sun River	0	0	0	40,000	40,000	40,000	40,000	6,000	6,220	34,000	40,220	34,000	0
Fort Sumner	5,000	(5,000)	0	0	0	0	0	13,000	15,999	0	2,862	(13,137)	0
Middle Rio Grande	0	0	0	2,050,000	2,050,000	2,050,000	2,050,000	512,000	513,889	1,538,000	[4] 2,526,889	2,050,000	112,000
Rio Grande	0	0	0	150,000	161,118	150,000	161,118	80,299	54,337	80,819	139,008	101,171	16,500
Tucumcari	11,118	0	11,118	204,000	354,000	204,000	354,000	3,000	4,687	204,000	355,687	351,000	0
Vermejo	0	150,000	150,000	0	0	410,000	635,000	248,211	249,406	0	656,195	406,789	0
W. C. Austin	225,000	0	225,000	30,000	30,000	30,000	30,000	0	25,088	30,000	30,000	4,912	0
Deschutes—North	0	0	0	0	174,643	0	174,643	404,564	422,988	0	81,924	(316,064)	25,000
	352,264	0	352,264										

Source and application of funds (obligations) for fiscal year 1953 program—Continued

(1)	Budget estimate submitted to Congress					Amount approved by Congress	Total program approved by Congress	Estimate of unobligated balance, May 31, 1952	Actual unobligated balance June 30, 1952	New funds appropriated	Approved program	Fiscal year 1953 allotment	
	Estimate of unobligated balance, June 30, 1952	Proposed transfers of unobligated balance	Unobligated funds to be applied	New appropriations requested	Total program (obligations)							Total	Reserves for future years
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Ochoco Dam	334,383	(330,096)	4,287	0	4,287	0	4,287	336,000	337,160	0	1,000	(336,160)	0
Savage Rapids Dam	0	0	0	0	0	700,000	700,000	0	0	700,000	638,062	700,000	61,938
Provo	0	0	0	2,310,000	2,310,000	2,310,000	2,310,000	40,000	64,749	2,270,000	[3] 2,313,000	2,270,000	24,749
Weber Basin	0	0	0	0	0	1,350,000	1,350,000	0	0	1,350,000	1,350,000	1,350,000	0
Columbia Basin	355,000	562,754	917,754	20,000,000	20,562,754	20,000,000	20,562,754	160,000	140,252	19,680,000	20,543,006	20,402,754	0
Yakima—Kennewick	0	0	0	0	0	1,500,000	1,500,000	0	0	1,500,000	1,500,000	1,500,000	0
Yakima—Roza	45,500	0	45,500	105,000	151,500	105,000	151,500	52,811	54,244	0	35,040	(6,548)	12,656
Eden	0	0	0	760,000	760,000	760,000	760,000	274,000	274,000	486,000	760,000	486,000	0
Kendrick	0	0	0	4,100,000	4,100,000	4,100,000	4,100,000	350,000	349,192	3,750,000	4,099,192	3,750,000	0
Riverton	120,000	(20,000)	100,000	437,000	537,000	437,000	537,000	323,693	408,966	233,307	666,273	257,307	0
Shoshone	76,651	(5,000)	71,651	216,000	287,651	216,000	287,651	136,889	189,911	216,000	664,022	474,111	0
Missouri River Basin	8,411,174	3,167,936	11,579,110	53,031,000	64,610,110	52,026,400	63,605,510	18,454,851	[5] 20,250,989	41,958,704	[7] 64,512,476	44,890,671	0
Rehabilitation and betterment	246,343	0	246,343	2,342,000	2,588,343	2,342,000	2,588,343	808,369	434,230	1,779,974	2,648,802	[8] 2,113,592	2,000
Inactive projects	1,175,731	(815,743)	359,988	0	0	0	0	1,173,649	1,176,251	0	0	(1,176,251)	0
Unallotted reserve	0	0	0	0	0	0	0	0	0	0	0	161,581	0
Adjustments:													
Transfer to GAE	(300,000)	300,000											
Provo River project	(18,000)		(18,000)										
Funds returned from defense agencies									100,000			(100,000)	
Funds to be returned from emergency fund												(500,000)	
Total	21,660,813	0	21,660,813	196,770,000	217,211,829	202,654,400	223,440,604	46,517,222	[9] 47,935,433	177,797,991	214,939,176	177,797,991	10,880,555

NOTES

[1] Does not include $40,000 "Construction and rehabilitation" funds for Boulder City operation and maintenance.
[2] Includes $131,000 contributed funds by Mexico.
[3] Includes $105,092 from "General investigations" appropriations.
[4] Includes $75,000 from "General investigations" appropriations.
[5] Includes $3,000 from "General investigations" appropriations.
[6] Excludes $333,398 other agencies, Missouri River Basin.
[7] Excludes $962,582 transferred to operation and maintenance.
[8] Excludes $102,980 to be returned from emergency fund.
[9] Does not include $423,583 Milk River emergency fund and $113,700 Bufford-Trenton emergency fund.

Column 7: Amount shown on p. 9 of S. Rept. No. 1803 as modified by p. 7 of Conference Rept. No. 2451 on H. R. 7176. These amounts are for additional funds excluding budgeted carryover shown in column 4 and including additional carryover of $24,856,409 ($22,161,469 used by Senate, plus $2,694,940 added by conferees to equal total shown in column 9).

Column 8: Amount of program approved by conferees (column 7) plus the budgeted carryover excluded in column 7 and minus amounts programed for future years as provided in budget.

Column 9: Amounts supplied by Bureau and used by conferees in determining new fund allowance of $177,797,991.

Column 11: Allocation of new appropriation only to projects by prior application of actual carryover in column 10 adjusted for transfers proposed in budget and shown in column 3. These amounts were not identified by the Congress.

Column 12: Program approved by Commissioner following passage of appropriation act.

emergency fund.

Column 12: Program approved by Commissioner [illegible]

Missouri River Basin project, detail

(1)	Budget estimate submitted to Congress: Estimate of unobligated balance, June 30, 1952 (2)	Proposed transfers of unobligated balance (3)	Unobligated funds to be applied (4)	New appropriations requested (5)	Total program (obligations) (6)	Amount approved by Congress (7)	Total program approved by Congress (8)	Estimate of unobligated balance, May 31, 1952 (9)	Actual unobligated balance, June 30, 1952 (10)	New funds appropriated (11)	Approved program (12)	Fiscal year 1953 allotment, total (13)
Owl Creek	705,000	(705,000)	0	0	0	0	0	757,000	760,809	0	24,809	(736,000)
Bostwick	0	841,000	841,000	3,124,000	3,965,000	3,124,000	3,965,000	1,500,000	1,449,406	2,364,094	3,914,406	2,465,000
Boysen	249,160	(49,160)	200,000	610,000	810,000	610,000	810,000	615,000	880,197	0	791,197	(89,000)
Cannonball	215,000	(215,000)	0	0	0	0	0	235,000	235,814	0	814	(235,000)
Angostura	50,000	(50,000)	0	1,158,000	1,158,000	1,158,000	1,158,000	50,000	50,450	1,108,000	1,158,450	1,108,000
Keyhole	305,000	(305,000)	0	0	0	0	0	350,000	333,535	0	111,535	(222,000)
Rapid Valley	0	1,500,000	1,500,000	2,043,000	3,543,000	1,000,000	1,000,000	900,000	995,825	1,000,000	[1] 1,096,018	1,000,000
Frenchman-Cambridge	67,000	(41,000)	26,000	0	26,000	2,043,000	3,543,000	67,000	69,005	1,143,000	4,138,825	3,143,000
Shadehill	12,000	(12,000)	0	0	0	0	26,000	26,000	26,805	0	43,005	(26,000)
Dickinson	435,000	0	435,000	0	435,000	0	0	590,000	603,721	0	2,805	(24,000)
Heart Butte	0	0	0	4,754,000	4,754,000	4,754,000	435,000	1,500,000	1,697,044	4,754,000	368,721	(235,000)
Canyon Ferry	100,000	(100,000)	0	0	0	0	4,754,000	170,000	179,137	0	6,451,044	4,754,000
Yellowtail	0	0	0		0	2,500,000	0	300,000	396,892	2,500,000	179,137	0
Lower Marias	0	0	0	1,000,000	0	1,880,000	2,500,000	0	1,917	1,880,000	2,596,892	2,200,000
Jamestown	470,000	(470,000)	0	0	1,000,000	2,000,000	1,880,000	490,000	514,477	2,000,000	1,881,917	1,880,000
Missouri-Diversion	85,234	(85,234)	0	0	0	0	2,000,000	100,000	98,977	0	2,024,477	1,510,000
Bixby	0	0	0	57,000	57,000	57,000	0	0	47	57,000	3,977	(95,000)
Fort Clark	150,000	(150,000)	0	100,000	100,000	100,000	57,000	390,000	381,726	0	135,047	135,000
Glendo	0	0	0	0	0	0	100,000	5,000	19,451	0	191,726	(190,000)
Kortes	1,885,669	(1,426,047)	459,622	0	459,622	0	0	1,925,419	1,890,714	0	14,451	(5,000)
Cedar Bluff				3,620,000	3,620,000	0	459,622			0	165,295	(1,725,419)
Glen Elder	0	0	0	6,000,000	6,000,000	6,000,000	0	1,100,000	1,259,906	4,159,906	20,000	20,000
Kirwin						1,500,000	6,000,000			1,500,000	4,159,906	2,900,000
Webster	50,915	0	50,915	0	50,915	0	1,500,000	168,915	171,855	0	1,500,000	1,500,000
Narrows	0	0	0	500,000	500,000	500,000	50,915	100,000	108,888	400,000	184,940	13,085
Crow Creek	440,158	5,742,842	6,183,000	21,563,000	27,746,000	16,298,400	500,000	2,698,470	3,373,584	11,693,378	833,888	725,000
Transmission division	1,461,667	(1,307,465)	154,202	0	154,202	0	22,481,400	1,460,000	1,387,253	0	[2]22,309,961	18,436,376
St. Francis	29,200	0	29,200	0	29,200	0	154,202	134,500	133,739	0	81,456	(1,305,798)
Cartwright	0	0	0	0	0	0	29,200	0	1,508	0	0	(133,739)
Sadie Flat	0	0	0	2,000	2,000	2,000	0	0	2,191	2,000	1,507	0
Savage	17,298	0	17,298	0	17,298	0	2,000	36,000	41,340	0	4,191	2,000
Sidney							17,298				19,340	(22,000)
Total, phase A	6,728,301	3,167,936	9,896,237	44,531,000	54,427,237	43,526,400	53,422,637	15,668,304	17,066,213	34,561,378	54,409,737	36,747,505
Phase B	1,392,337	0	1,392,337	383,500	1,775,837	2,500,000	4,182,873	1,929,360	2,333,958	1,397,326	4,769,341	1,680,584
Phase C	267,981	0	267,981	2,061,055	2,329,036	[3]	[3]	812,632	800,350	[3]	[3]	[3]

See footnotes at end of table.

Missouri River Basin project, detail—Continued

(1)	Budget estimate submitted to Congress					Amount approved by Congress	Total program approved by Congress	Estimate of unobligated balance, May 31, 1952	Actual unobligated balance, June 30, 1952	New funds appropriated	Approved program	Fiscal year 1953 allotment, total
	Estimate of unobligated balance, June 30, 1952	Proposed transfers of unobligated balance	Unobligated funds to be applied	New appropriations requested	Total program (obligations)							
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Phase D	22,555	0	22,555	55,445	78,000	[2]	[2]	44,555	50,468	[2]	[3]	[3]
Phase E				1,000,000	1,000,000	1,000,000	1,000,000			1,000,000	[4]	962,582
Other agencies	0			5,000,000	5,000,000	5,000,000	5,000,000	0	0	5,000,000	5,333,398	5,000,000
Adjustments: Emergency funds returned												500,000
Total	8,411,174	3,167,936	11,579,110	53,031,000	64,610,110	52,026,400	63,605,510	18,454,851	[5] 20,250,989	41,958,704	[6] 64,512,476	44,890,671

[1] $96,018 unobligated balance from phase B included.
[2] Includes $500,000 to be returned from emergency fund.
[3] In phase B.
[4] Transferred.
[5] Excludes $333,398, other agencies.
[6] Excludes $962,582, operations and maintenance.

COACHELLA VALLEY COUNTY WATER DISTRICT DISTRIBUTION SYSTEM

Mr. JENSEN. Now, I am going to bring up a matter which has been discussed at quite some length by this committee and the Bureau of Reclamation and the Congress for a number of years past, and that is the Coachella Valley project of California.

STATUS OF LITIGATION

What is the present status of the Coachella division litigation? Is the Department planning to carry the case further, and what is the picture as of this moment?

Mr. LINEWEAVER. On March 11, 1953, Judge Harry C. Westover, United States district judge at Los Angeles, filed a memorandum opinion in the case of the United States of America against the Coachella Valley County Water District.

Mr. JENSEN. I might say, Mr. Lineweaver, that Mr. Norrell has been a member of this committee during all this controversy, and many years before this controversy arose. He knows what the controversy has been all along, and so I am going to ask Mr. Norrell if he has any questions and to handle this matter for the committee.

Mr. LINEWEAVER. Very well, sir.

Mr. NORRELL. I suggest that you make whatever statement you desire to make before we ask questions.

Mr. LINEWEAVER. This case grew out of the proviso in the appropriation bills for 1952 and 1953 in which appropriations were made for the completion of the Coachella County Water District distribution system in excess of the $13,500,000 repayment contract obligation.

This proviso also provided that the money was to be nonreimbursable unless a court of competent jurisdiction held the district to be liable. I will insert the exact wording of the proviso in the record.

(The matter referred to follows:)

PROVISO CONTAINED IN APPROPRIATION ACT 1952

Not to exceed $2,783,000 of the appropriation herein made for "Construction and rehabilitation, Bureau of Reclamation" shall be expended for completion of construction of the Coachella division of the All-American Canal system, Boulder Canyon project: *Provided*, That any sums thereof so expended in excess of the amount required to be repaid under the existing contract between the Coachella Valley County Water District and the United States shall be repayable by said district to the United States unless said district shall be judicially determined by a court of competent jurisdiction to be not liable therefor.

PROVISO CONTAINED IN APPROPRIATION ACT 1953

Provided further, That not to exceed $1,419,000 of the appropriation herein made for "Construction and rehabilitation, Bureau of Reclamation" shall be expended for completion of construction of the Coachella division of the All-American Canal system, Boulder Canyon project in accordance with the terms and conditions of the appropriation for the same purpose contained in the Interior Department Appropriation Act, 1952.

Mr. LINEWEAVER. Following that proviso, the Secretary of the Interior requested the Department of Justice to institute action in the United States District Court of Los Angeles to make this determination. The case was assigned to Judge Westover, and within the last year he heard it at Los Angeles. The final briefs were filed in January of this year and, as I stated, on March 11 he handed down a memo-

randum opinion, of which so far we have the only copy in Washington, that I have been able to find.

Judge Westover said in concluding a 20-page review:

> Judgment will be for the defendant; findings of fact and conclusions of law to be prepared by counsel for defendant in conformity herewith for presentation to the court on or before April 25, 1953.

This opinion holds that the contract that was entered into in 1947 by the Secretary of the Interior on behalf of the United States at the Coachella Valley County Water District, required the United States to complete the project distribution system as described in exhibit A attached to the contract for $13,500,000.

The opinion, from a layman's viewpoint, and I have consulted our attorneys on it, is quite clear as to the courts findings, and it is quite critical of the Bureau with respect to the estimating that was done and the slowness with which the project distribution system was constructed. In the opinion Judge Westover said:

> The contract clearly created an obligation on the part of the United States to complete the project.

Congress has appropriated funds to complete it. The final contract will be awarded about the middle of April, and we expect to complete the project in March of next year.

The other problem, Mr. Chairman, that we have had on our hands for the last 6 months or so has been as to whether or not the Bureau should deliver water to the parts of the system completed with the funds appropriated over and above the $13,500,000 without a repayment contract.

In November of 1951, the Secretary of the Interior instructed the Commissioner of Reclamation that until a court held otherwise the Bureau of Reclamation should not deliver water without a repayment contract.

When the matter came up last fall about the time that one segment of the distribution system was being completed, the question was raised as to whether or not we could deliver water through some of the subunits in the distribution system that had been built with funds over and above the $13,500,000 of the repayment obligation.

Senator Hayden, then Chairman of the Senate Appropriations Subcommittee on Interior, on September 3, 1952, addressed a letter to Secretary Chapman, which I will file for the record. He says in the letter:

> This appropriation was made by Congress, knowing that the above suit was before the court, and when the various subunits and units of the project are completed there can be no reason why they could not be put in operation pending the outcome of the litigation.

(The letter above referred to follows:)

UNITED STATES SENATE,
COMMITTEE OF APPROPRIATIONS,
September 3, 1952.

HON. OSCAR L. CHAPMAN,
Secretary of the Interior,
Washington, D. C.

DEAR MR. SECRETARY: It has just been called to my attention that some subunits of the Coachella division of the All-American Canal will be completed in the near future. As you know, litigation has been initiated by the Department of Justice in carrying out the Interior Department Appropriation Act of 1952 in order to obtain a judicial determination of the reimbursability of the funds

in excess of the $13,500,000 repayment contract which was signed between the district and the Bureau of Reclamation.

Public Law 470 of the 82d Congress provides for an appropriation of $1,419,000 for the completion of the project. This appropriation was made by Congress, knowing that the above suit was before the court, and when the various subunits and units of the project are completed there can be no reason why they could not be put in operation pending the outcome of the litigation.

I understand that lateral 99.4 has been completed but has not been tested, accepted, nor turned over for operation, so as to be of immediate benefit of the water users.

I shall be obliged if you will advise me of the plan of the Department with respect to the prompt utilization of the irrigation facilities of the Coachella division as construction proceeds.

Yours very sincerely,

CARL HAYDEN,
United States Senate.

Mr. LINEWEAVER. On November 5, 1952, Senator Knowland, who is also a member of the Senate Appropriations subcommittee, and who wrote the language into the bill both years, wrote a letter to Secretary Chapman in similar fashion. I offer that for the record.

(The matter referred to follows:)

UNITED STATES SENATE,
COMMITTEE ON APPROPRIATIONS,
November 5, 1952.

HON. OSCAR L. CHAPMAN,
Secretary of the Interior,
Washington 25, D. C.

DEAR MR. SECRETARY: On September 3, Senator Hayden contacted you on the policy of placing into use increments of the Coachella Division of the All-American Canal. At that time, Senator Hayden informed you that lateral 99.4 had been completed, but had not been tested, accepted, or turned over for operation for the benefit of the water users. In Senator Hayden's letter he stated, "Public Law 470 of the 82d Congress provides for an appropriation of $1,419,000 for the completion of the project. This appropriation was made by Congress, knowing that the above suit was before the court, and when the various subunits and units of the project are completed there can be no reason why they could not be put in operation pending the outcome of the litigation." It is my understanding that lateral 99.4 is complete, lateral 97 is almost complete, and that lateral 99.8–0.51 is also in a stage of near completion.

As a member of the Senate Appropriations Committee, I fully support Senator Hayden's view that there is no reason why the laterals, when completed, should not be put into operation under the provisions of the appropriation act. It is obvious that when Congress appropriated the money, it was with the understanding that as the facilities were completed, each one should be put into operation for the purpose for which they were constructed. Under the suit which has been initiated before the courts, a decision will be rendered as to where the liability lies for the amount in excess of the $13,500,000 repayment contract which was signed between the district and the Bureau of Reclamation.

I would greatly appreciate your advising me whether the Department will put the laterals to beneficial use as soon as they have been completed, pending a settlement of the litigation.

Sincerely yours,

WILLIAM F. KNOWLAND.

Mr. LINEWEAVER. In the meantime, the matter was referred to the Solicitor of the Department when the Bureau of Reclamation made a recommendation to the Secretary that we should go ahead and deliver the water, pending the outcome of the litigation. On November 21, 1952, the former Solicitor handed down an opinion in which he held that until a repayment contract was entered into by the Coachella district the Secretary of the Interior, could not, under the reclamation law, deliver water through this system, or the parts of the system

which had been built with the funds over and above $13,500,000 in the repayment obligation.

I will file that opinion for the record.

(The matter referred to follows:)

DELIVERY OF WATER FROM COMPLETED WORKS IN COACHELLA VALLEY

Coachella distribution system—repayment contract—delivery of water

Pending the outcome of litigation to determine the relative obligations of the United States and the Coachella Valley County Water District under repayment contract No. IIr–781 supplemental, dated December 22, 1947, it would not be legally proper to deliver water to the district through facilities constructed at a cost in excess of the present $13,500,000 repayment obligation of the district, unless the district agrees to repay such excess costs if, and only if, the Government prevails in the pending suit.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SOLICITOR,
Washington 25, D. C., November 21, 1952.

MEMORANDUM

To: The Secretary.
From: The Solicitor.
Subject: Delivery of water from completed works in Coachella Valley.

This is in response to a memorandum from the Acting Secretary dated October 2, 1952, requesting my views as to whether water may legally be delivered to the Coachella Valley County Water District by means of facilities constructed by the Government at a cost in excess of the present $13,500,000 repayment obligation of the district.

The question arises with respect to unit 9 and a portion of unit 8 of the Conchella distribution system, which are being constructed with funds made available in the Interior Department Appropriation Act, 1952 (Public Law 136, 82d Cong.), by an item reading as follows:

"Not to exceed $2,783,000 of the appropriation herein made for 'Construction and rehabilitation, Bureau of Reclamation' shall be expended for completion of construction of the Coachella division of the All-American Canal system, Boulder Canyon project: *Provided*, That any sums thereof so expended in excess of the amount required to be repaid under the existing contract between the Coachella Valley County Water District and the United States shall be repayable by said district to the United States unless said district shall be judicially determined by a court of competent jurisdiction to be not liable therefor."[1]

This item in the act resulted from a controversy between the irrigation district and the Bureau of Reclamation as to the interpretation of the respective liabilities of the district and the United States under repayment contract No. IIr–781 supplemental, dated December 22, 1947.

According to the district's interpretation, the United States, in consideration of a total repayment by the district of $13,500,000, obligated itself (subject only to the availability of appropriations) to construct the complete distribution system shown on exihibit A attached to the contract, including the whole of units 8 and 9.

The Bureau of Reclamation, on the other hand, contended that the Governments' obligation was only to expend, toward completion of construction, the $13,500,000 which the district had specifically obligated itself to repay under the contract, and that the additional amounts, over and above $13,500,000, necessary to build unit 9 and to complete unit 8 could not be expended without the execution of a supplementary contract binding the district to repay such additional amounts. The Bureaus' position was based upon subsection (b) of section 4 of the Boulder Canyon Project Act (43 U. S. C., 1946 ed., sec. 617c (b)), providing as follows:

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[1] The 1953 appropriation act (Public Law 470, 82d Cong.) appropriated an additional $1,419,000 to be expended for completion of construction of the Coachella division "in accordance with the terms and conditions of the appropriation for the same purpose" contained in the 1952 act.

"Before any money is appropriated for the construction of said main canal and appurtenant structures to connect the Laguna Dam with the Imperial and Coachella Valleys in California, or any construction work is done upon said canal or contracted for, the Secretary of the Interior shall make provision for revenues, by contract or otherwise, adequate in his judgment to insure payment of all expenses of construction, operation, and maintenance of said main canal and appurtenant structures in the manner provided in the reclamation law."

It is clear that the 1952 appropriation item, insofar as construction of the Coachella distribution system is concerned, changed this requirement in the Boulder Canyon Project Act, at least to the extent of appropriating additional funds and directing[2] the completion of construction without requiring the prior execution by the district of a further agreement to repay the costs of such construction in excess of $13,500,000.[3] Pursuant to this directive from the Congress, construction is nearing completion, and a suit to determine the respective rights and liabilities of the parties is now pending in the United States District Court for the Southern District of California.

Section 46 of the Omnibus Adjustment Act of May 25, 1926 (43 U. S. C., 1946 ed., sec. 423a), to which the Boulder Canyon Project Act is supplementary, except as therein provided, specifically prohibits the delivery of water, upon the completion of the construction of a new project or a new division of a project, prior to the execution of a contract providing for the payment of the cost of constructing the works. Subsection (d) of section 9 of the Reclamation Project Act, 1939 (43 U. S. C., 1946 ed., sec. 387 (d)), likewise prohibits the delivery of water for the irrigation of lands in connection with any new project, new division of a project, or supplemental works on a project, until after a contracting district has entered into a repayment contract with the United States in a form satisfactory to the Secretary.

Therefore, unless the law has been changed as to Coachella by the appropriation item quoted above, it would be illegal for the Secretary of the Interior to deliver water through units 8 and 9 of the Coachella distribution system pending the execution of a supplementary contract covering the costs of constructing these units.

The appropriation item does not expressly relieve the Secretary of the Interior from the statutory prohibitions against the delivery of water until a contract has been executed covering the costs of constructing the facilities through which the water is delivered. Moreover, the hearings, reports, and debates[4] antecedent to the passage of the 1952 and 1953 appropriation acts show that the attention of the legislators was directed to the completion of construction, and that the legislative history is devoid of any indication that Congress considered in any manner the question of utilization of the structures, once they were completed, while the scope of the present repayment contract is in litigation. In fact, the primary need for haste mentioned by representatives of the district was stated to be the increased costs of delay.

Accordingly, I am of the opinion that, pending the outcome of the litigation, it would be improper from the legal standpoint to deliver water to the Coachella Valley County Irrigation District through facilities constructed at a cost in excess of the present $13,500,000 repayment obligation of the district, unless the Department first obtains assurance from the district that it will repay the excess costs if the final outcome of the litigation is adverse to the district.

The conclusion that I have reached does not mean that the structures must stand idle until a final judgment is handed down defining the respective obligations of the Government and the district under the present repayment contract.

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[2] In Decision B–106038, dated December 7, 1951, the Comptroller General interpreted the appropriation item as evidencing an intention by Congress that the Coachella distribution system should be completed at the earliest possible date and that the question as to the extent of the obligations created under the existing contract should be left for subsequent determination by a court of competent jurisdiction.

[3] In Decision A–32702, dated December 6, 1933, the Comptroller General took the position that, inasmuch as an appeal had been filed by the Coachella County Valley Water District from a decision of the lower court validating a contract dated December 1, 1932, with the Imperial Irrigation District for the construction of the All-American Canal, no funds could be expended for construction of the canal until the contract had been found to be valid by the court of last resort.

[4] H. Rept. No. 339, S. Rept. No. 499, H. Rept. No. 775, 82d Cong., 1st sess.; hearings before the subcommittee of the Committee on Appropriations, House of Representatives, 82d Cong., 1st sess., on Interior Department appropriations for 1952, pp. 443–446; hearings before a subcommittee of the Committee on Appropriations, U. S. Senate, 82d Cong., 1st sess. on H. R. 3790, pp. 1335–1362; H. Rept. No. 1628, S. Rept. No. 1803, H. Rept. No. 2451, 82d Cong., 2d sess.; House hearings on the Interior Department appropriations for 1953, pp. 844–854; Senate hearings on H. R. 7176, pp. 668–676.

In my opinion, the statutory provisions that make delivery of water dependent upon the existence of a repayment contract would be satisfied, in this instance, if the Bureau of Reclamation and the district entered into a supplementary contract covering the additional costs of the works involved here, under which the district would be obligated to repay such costs if, and only if, the Government prevails in the pending suit. Under such an arrangement, the district would, before water is delivered, have agreed to repay such additional costs of construction as the courts might hold that the Government is not bound to bear under the present contract. On the other hand, a decision by the courts that the Government is bound, under the present contract, to bear the additional costs of construction would of necessity mean that delivery of water to the district could continue without requiring any further payment over and above the $13,500,000 previously mentioned.

MASTIN G. WHITE, *Solicitor.*

Mr. LINEWEAVER. On the 21st of January 1953, Senator Knowland and Senator Hayden addressed a joint letter to Secretary McKay in which they referred to the letters to the former Secretary in regard to placing certain completed facilities of the Coachella Valley distribution system into operation for the delivery of irrigation water. In that letter they said:

it is our understanding that the Solicitor of the Department has raised a question as to the authority to deliver water without coverage by a repayment contract. Our view, as stated in our letters, is that the Congress by the provisos in the Interior Appropriation Acts of 1952 and 1953 intended that the facilities were to be completed and placed in operation pending court decisions as to the liability of the district for expenditures beyond the present repayment-contract coverage.

However, since the question has been raised as to the authority of the Department to deliver water under the circumstances, this letter is to advise you that we feel that water deliveries should be made pending decision by the courts which was the clear congressional intent.

(The letter above referred to follows:)

UNITED STATES SENATE,
COMMITTEE ON APPROPRIATIONS,
January 21, 1953.

Hon. DOUGLAS MCKAY,
Secretary of the Interior, Department of the Interior,
Washington, D. C.

DEAR MR. SECRETARY: In connection with our letters to the former Secretary in regard to placing certain completed facilities of the Coachella distribution system into operation for the delivery of irrigation water, it is our understanding that the Solicitor of the Department has raised a question as to the authority to deliver water without coverage by a repayment contract. Our view, as stated in our letters, is that the Congress by the provisos in the Interior Appropriation Acts of 1952 and 1953 intended that the facilities were to be completed and placed in operation pending court decisions as to the liability of the district for expenditures beyond the present repayment-contract coverage.

However, since the question has been raised as to the authority of the Department to deliver water under the circumstances, this letter is to advise you that we feel that water deliveries should be made pending decision by the courts which was the clear congressional intent.

Sincerely yours,

WILLIAM F. KNOWLAND,
CARL HAYDEN.

Mr. LINEWEAVER. That was written before Judge Westover's decision was handed down. Since we expected Judge Westover's opinion almost any day, the matter has been held in abeyance pending appropriation hearings before this committee, and the handing down of Judge Westover's opinion.

Last week, as one of the laterals was ready for testing, after consultation with Mr. Beasley, the Administrative Assistant to the Secre-

tary, we advised the regional director at Boulder City, and the project engineer at Coachella, to place this lateral in operation for testing purposes and for the delivery of water to lands that had been broken out and which were in danger of erosion from the winds, pending clarification of the effect of Judge Westover's opinion.

As I noted in this wind-up of Judge Westover's opinion the findings of fact and conclusions on which a formal order will be entered will not be presented to the court until April 23, 1953.

Now, we are confronted with another lateral being completed and ready for operation this spring, and we are presenting this matter to the committee at this time for such comment as this committee feels it desires to make in the light of Senator Knowland's and Senator Hayden's interpretation of the intent of Congress in connection with this proviso.

Mr. NORRELL. Now, does that complete your statement, Mr. Lineweaver?

Mr. LINEWEAVER. With this one addition, Mr. Norrell.

As I say, copies of this opinion have not been received by the Department of Justice here or by the Chief Counsel or the Solicitor of the Department and, therefore, we are not in a position at this time to say what the attitude of the legal people of the Bureau or of the Department will be. So, I am presenting these facts to the committee for such comment or action as they may desire to take.

Mr. NORRELL. I would like to ask you if this case was submitted to the court or a jury?

Mr. LINEWEAVER. To the court.

Mr. NORRELL. To the court?

Mr. LINEWEAVER. Yes, sir.

Mr. NORRELL. And, was the case submitted on evidence or an agreed statement of facts?

Mr. LINEWEAVER. On an agreed set of facts, I think, Mr. Norrell. I was not present and have not seen the record.

Mr. NORRELL. I wish you would submit to the committee a copy of the complaint and the other pleadings of the Interior Department.

Mr. LINEWEAVER. It was handled through the Department of Justice.

Mr. NORRELL. Whatever the Department of Justice did involves the Interior Department, you know.

Mr. LINEWEAVER. Yes, sir.

Mr. NORRELL. And also submit copies of the answers or demurrers.

Mr. LINEWEAVER. Yes, sir.

Mr. NORRELL. As well as a copy of the agreed set of facts that you submitted the case on.

Mr. LINEWEAVER. Yes, sir.

LOSS INCURRED BY THE GOVERNMENT

Mr. NORRELL. Now, how much in figures, does the Government lose by virtue of this decision?

Mr. LINEWEAVER. According to the construction estimates of the cost beyond the $13,500,000, it is something over $3 million to complete system.

Mr. NORRELL. In excess of $3 million?

Mr. LINEWEAVER. Yes, sir.

Mr. NORRELL. Now, as I construed the matter last year, I thought the Bureau of Reclamation would probably win this lawsuit. I doubted that you would enter into a contract that would terminate where this matter has terminated.

NUMBER OF ATTORNEYS IN DEPARTMENT

How many attorneys do you have over there in the Interior Department?

Mr. LINEWEAVER. In the Interior Department?

Mr. NORRELL. Yes.

Mr. LINEWEAVER. The Bureau of Reclamation has some 12 or 15 attorneys in Washington.

Mr. NORRELL. In the Bureau of Reclamation?

Mr. LINEWEAVER. In the Washington office, yes, sir.

Mr. NORRELL. You have some attorneys out in the area of California too, have you not?

Mr. LINEWEAVER. In Los Angeles we have some 5 or 6 attorneys; yes, sir.

Mr. NORRELL. That makes about 20 in the Bureau of Reclamation.

Mr. LINEWEAVER. No, sir. Then we have attorneys attached to each of the seven regional offices.

Mr. NORRELL. How many attorneys do you have all told in the Bureau of Reclamation, in the field and in the Washington office?

Mr. LINEWEAVER. I will have to get the exact figure, but it is around 75.

Mr. NORRELL. Around 75?

Mr. LINEWEAVER. Yes, sir.

Mr. NORRELL. Now, do you not think that this committee could have reasonably anticipated that with 75 lawyers you would not have given away in excess of $3 million?

Mr. LINEWEAVER. Mr. Norrell, as a layman, I feel sure that you would not expect me to comment on that.

Mr. NORRELL. I know, and I sympathize with you, but I think it is a gross reflection on the ability of the attorneys for the Reclamation Bureau to write a contract and have it entered wherein a dispute later the Government is to sustain a loss of $3,000,000, or more.

I must say that I am thoroughly disgusted. Last year I defended the Bureau of Reclamation on this project. I took the position that it should not be completed, unless they entered into a payment contract covering the entire amount of money. They refused to enter such a contract and then I suggested adjudicating the matter in the courts feeling that, certainly, the courts would sustain the actions of the Bureau of Reclamation.

Now we are advised that the court ruled against the Bureau of Reclamation in every respect, and I cannot let the occasion pass, without saying that I am more than disappointed.

Now, I would like to read the complaint, answer, briefs, and the other pleadings, and especially the agreed statement of facts on which the case was submitted to the court. However, I assume that there is nothing to do but to authorize the Bureau of Reclamation to deliver water presuming all points involved in the suit so that, if there is an appeal, our actions would not in any way affect the case.

Mr. Chairman, I know nothing now to say except that this committee might just as well recognize the court's decision has settled this question.

Mr. LINEWEAVER. I think I can have you the whole file in a day or two, and if I cannot do anything else we will have this opinion photostated for your use.

Mr. NORRELL. Do you have those here in Washington?

Mr. LINEWEAVER. Yes, sir; I am quite sure.

Mr. NORRELL. I would like, Mr. Chairman, to read those opinions, and we can do that by the time we mark up the bill.

Mr. LINEWEAVER. If you would like to read this opinion and return it to me, I can let you start on that tonight.

Mr. NORRELL. I notice Mr. Phillips of California also makes the same recommendation as Senator Knowland and others.

Mr. LINEWEAVER. Mr. Norrell, as I say, I am a layman and do not want to get into this argument between lawyers. I think that, perhaps, for the record, we should be permitted to let our Chief Counsel file a statement.

Mr. NORRELL. Not only that but, with the chairman's consent, I would like to have the Chief Counsel come here and testify. Not file a statement but to come himself and testify. I would object to his filing a statement.

Mr. JENSEN. On your recommendation, Mr. Norrell, it is so ordered.

Mr. NORRELL. It is my recommendation.

This which I have here is the memorandum of the opinion but it is not the other pleadings before the court?

Mr. LINEWEAVER. No, sir; that is right. That is the only one we have.

Mr. NORRELL. It does not include the statement of facts?

Mr. LINEWEAVER. No, sir. I will get the entire record. If it is not here, then I will have it sent in from Los Angeles.

Mr. NORRELL. Is the same Chief Counsel on the job yet?

Mr. LINEWEAVER. Yes, sir; the Chief Counsel for Reclamation since 1950, but not the same Solicitor of the Department who rendered this opinion in November. Mr. Fix was Chief Counsel of the Bureau of Reclamation when the contract was written in 1947 but was succeeded by Mr. Fisher in 1950.

Mr. NORRELL. Did the chief attorney approve the contract that you entered into originally?

Mr. LINEWEAVER. Yes, sir; the then Chief Counsel, Mr. Fix.

Mr. NORRELL. I want to say that I do not blame you and the other laymen over there a bit in the world, but I do say that the attorney who had charge of the matter should have known better.

DELIVERY OF WATER

Mr. LINEWEAVER. I make this further comment:

When the first proviso was written into the 1952 appropriation bill, we submitted our recommendation to the Solicitor, and the Secretary submitted the matter to the Comptroller General for an opinion as to whether we should proceed without a repayment contract. The Comptroller General held that it was the clear intent of Congress that we should proceed without requiring a repayment contract. The

Comptroller General did not pass on the question as to whether we should deliver the water.

Mr. NORRELL. That is the only matter that is now pending. I agree with that, because you had just as well go ahead and let them have the water and complete the job. We are holding them back now.

Mr. LINEWEAVER. We do not build these projects just to be building them. We build them for the service that they will provide; and, in our judgment as administrators, a project is not completed unless it is delivering water to the irrigation system.

Mr. NORRELL. Where this committee was concerned, to some extent, was the matter of who was going to pay for the project, but that is water over the dam now. It is adjudicated and the district wins. There is nothing left for the Government to do but to complete the project and give them the water under the repayment contract that they have already executed.

Mr. LINEWEAVER. I do not think that either the Bureau or the Department, nor the Department of Justice, has considered the matter of an appeal. Of course, they would not appeal until a formal order is entered in April and they may not then.

Mr. NORRELL. Well, of course, the formal order should be entered. I do not know why it is being held up.

Mr. LINEWEAVER. I will tell you one reason and that is, Mr. Redwine, the attorney for the district had a heart attack about 2 weeks ago and he is not able to work at this time.

Mr. NORRELL. Is there anything you can do to expedite the rendering of the final decree by the court?

Mr. LINEWEAVER. As I say, the difficulty is that Mr. Redwine, the attorney for the district, has had a heart attack and has just about gotten home and will not be able to do any work for several weeks.

Mr. NORRELL. We can tell, Mr. Chairman, pretty well what the decision will be by the memorandum of the opinion which we have.

Mr. JENSEN. Mr. Lineweaver, is water being furnished to those laterals now?

Mr. LINEWEAVER. The water is being run throughout the laterals for testing purposes, and we cautioned the project engineer that the water must not be wasted, but should be delivered to these lands that have been "broken out" to prevent wind erosion. Under the circumstances, we did caution him that until there was a clarification of this proposition and that we could not under the opinion of the former Solicitor and without further instructions from Congress deliver water on a permanent basis.

Mr. JENSEN. I might say, after listening to this colloquy between Mr. Norrell and yourself, so far as I am concerned, personally, I would be in favor of delivering that water at the earliest possible time so that those people out there who need that water so badly for their crops can get it.

I do not think we should stand too much on ceremonies. There would be no crime, nor no illegal act committed, as I see it, nor would it affect the case in any way, shape, or form one way or the other, if water was made available in those laterals for use of those water users at this time. Do you attorneys, Mr. Norrell and Mr. Budge, agree with that statement?

Mr. NORRELL. If the decision of the court was, as has been suggested here, I would say you are right. I had not read the opinion here. I will have to read this before we go into that, but if it is like it has been represented here, I agree with you thoroughly, and there is not anything for us to do but go ahead and deliver the water.

Mr. FENTON. Has the Government any further right of appeal? What court is this in which this is pending?

Mr. LINEWEAVER. The United States district court for southern California. As I understand it, Dr. Fenton, the decision on the appeal has not been made, so far as I have been advised by the Department or the Department of Justice, and Mr. Norrell and Mr. Budge, I am sure, will tell you that the usual practice is that the question of the appeal would not be determined until a formal order or decree has been entered.

Mr. BUDGE. I would think that the Government could protect itself fully in the matter by entering into a stipulation with the district that the delivery of water would not prejudice the position of the Government.

Mr. LINEWEAVER. Let me add this: The situation with respect to the delivery of the water is quite important in the Coachella Valley, because the irrigation season in that climate down there is just about at the beginning.

Mr. JENSEN. That is right. That is why I was anxious to see that they do get the water.

(Discussion off the record.)

Mr. LINEWEAVER. These water users have probably gone ahead and broken out hundreds of acres, and it is subject to wind erosion. It also costs two or three hundred dollars an acre to clear and break out the land, and we felt that we could combine the testing operation with the delivery of water to these lands that have been broken out.

Mr. JENSEN. What do you mean by "broken out"?

Mr. LINEWEAVER. Cleared and made ready for irrigation. The surface has been broken and leveled out and the sand humps have been cut off.

Mr. JENSEN. The leveling process is what makes it possible to irrigate the land?

Mr. LINEWEAVER. That is right.

Mr. JENSEN. Of course, there is another thing that enters into this whole problem and that was the fact that whoever was in charge with the placing of the personnel out in the Coachella Valley did not use much discretion in the number of people that was put out there, whose salaries were charged to the Coachella project.

I recall very well when I was there in 1948, they had employed right in the valley at Coachella 81 people, which was, possibly, twice as many as they needed. They were not satisfied with that and they went 50 miles north to Benton and established and set up another office and they put 50 people in that office. They charged all those salaries to the Coachella Valley. Then, according to the testimony which no one has refuted, they had an office moved from Denver, Colo., where they had some files there that had something to do with the Coachella Valley, and they started the moving of that office to the Coachella Valley project. The water district and their representatives contended that $13,500,000 would have been more than sufficient to do that job had not so much money been expended for excessive personnel hire.

You know that story, Mr. Lineweaver, by heart, because it has been discussed here a lot of times.

Part of this blame for the $3 million, which apparently the taxpayers in the United States must pay, should not be blamed entirely on the Chief Counsel in the Solicitor's Office, but possibly even more blame should be charged against the person who was in charge of putting all those people out there that were not necessary.

Mr. LINEWEAVER. Mr. Chairman, to complete the record, I would like to say now that the Coachella project office now has 31 employees, of whom 22 are engineers and in the area of technical services. The construction engineer of the project during this construction period, Mr. C. S. Hale, who is a Virginian, and a very good engineer, left the Bureau service within the last year and is now general manager and chief engineer of the Coachella Water District at a much better salary than the Bureau of Reclamation could pay.

Mr. JENSEN. That might be one of the reasons why there are only 31 people there now instead of 131 who were there when I was there in 1948.

Mr. LINEWEAVER. I just made that statement for the record, Mr. Chairman.

STATUS OF CONSTRUCTION

I would like to file a statement for the record, showing the status of the Coachella construction. There is no estimate in this budget as we have enough funds appropriated to complete the project and we are holding in abeyance $260,000 for a highway bridge that was provided by the Congress in the 1953 appropriation bill pending the settlement of a dispute between the State Highway Commission of California and the local people regarding the relocation of the highway.

(The matter referred to follows:)

COMPLETION OF CONSTRUCTION—COACHELLA DIVISION, ALL-AMERICAN CANAL SYSTEM

Funds in the amount of $1,419,000 were provided by the Congress in the 1953 appropriation bill to complete all remaining construction presently authorized on the Coachella division of the All-American Canal system. These funds included additional amounts for construction of part 2, unit 9, and unit 8 of the distribution system, $97,000 for replacements of certain irrigation conduits under the Southern Pacific Railroad, and $260,000 for construction of a permanent highway bridge to carry the Mecca Blythe highway across the Coachella main canal. With the funds thus available work has gone forward on all remaining items of the program with the exception of the highway bridge. The $260,000 provided for this facility is being held in abeyance until the future status of the highway has been settled. Construction of the remaining portions of the program is being accomplished substantially in accord with the estimates submitted last year. Therefore unless unforeseen circumstances should develop it is expected that all work can be completed with the funds now available. Construction of irrigation laterals on part 2 of unit 9 has been completed, leaving only unit 8 of the system to be built. Contracts for the construction of part 1 of unit 8 and an equalizing reservoir for this unit have been awarded, and specifications have been issued for part 2, which include all of the remaining work to be accomplished. It is anticipated that the final construction contract will be awarded after the middle of April. As provided in these latter specifications, all remaining work on the distribution system of the Coachella Valley will be completed by end of March 1954.

Operation of the portions of the distribution system which have been or will be constructed at a cost in excess of the $13.5 million limitation of the 1947 repay-

ment contract with the Coachella Valley County Water District and which include part 2 of unit 9 and all of unit 8 are subject to a determination by the court in the case now pending. Until such a decision has been rendered it is the opinion of the Solicitor of the Department of the Interior (M–36150) that "pending the outcome of the litigation, it would be improper from the legal standpoint to deliver water to the Coachella Valley County Irrigation District through facilities constructed at a cost in excess of the present $13,500,000 repayment obligation of the district, unless the Department first obtains assurance from the district that it will repay the excess costs if the final outcome of the litigation is adverse to the district." On the basis of this opinion, the delivery of water through any of the irrigation facilities on part 2 of unit 9 which have recently been completed and are otherwise ready for service, has been deferred except as to temporary or testing service.

Construction of a permanent highway crossing at the intersection of the Mecca-Blythe Highway and the Coachella main canal remains to be determined. This work is required to be performed by the Bureau of Reclamation under a contract with the State of California Highway Department dated March 7, 1946. As provided in the original terms of the contract, the Bureau was allowed a period of 5 years in which to construct the crossing. The 5-year period expired in 1951 and has been renewed for 1-year periods since. During this time consideration was given to the abandonment of the highway which would have removed the requirement for construction of the bridge. However, local interest has been expressed in favor of maintaining the highway, and as this is a bonded road, it cannot be closed by the State without the approval of the voters and the approval of the State legislature. Negotiations have been conducted with the California State Highway Department in an endeavor to obtain a 5-year extension of the contract but that authority has agreed only to extending the contract for 1-year periods. Consequently, the Bureau concluded that it could no longer delay fulfillment of its obligation under the contract to build the bridge and included an item of $260,000 for this purpose in the appropriation estimate submitted to the Congress last year. Funds in the full amount of this estimate were appropriated.

Within recent months objection has been expressed by the Coachella Valley County Water District and the Riverside County Board of Supervisors to the expenditure of public funds for construction of a permanent bridge at the canal crossing. Also there has been considerable active controversy over the future status of the highway. While the Bureau of Reclamation is not a party to the highway issue and is not involved in the determination of whether or not the road should be maintained, we have deferred construction of the bridge until the future status of the highway has been resolved, or until such time as the State of California shall, under the terms of the 1946 contract, insist that the Bureau fulfill its obligation to construct the bridge. The State has advised that it considers extension of the contract no solution to the problem and only postpones the ultimate decision. The Bureau concurs in this and hopes that the parties directly concerned with the status of the highway will be able to reach a conclusion on this matter in the near future. In the meantime, our engineering forces are working with the State highway authorities and other interested parties in an effort to develop a design for a crossing which can be constructed at less cost than the estimate of $260,000 and will satisfy the terms of the contract in the event the present status of the highway is maintained.

THURSDAY, MARCH 26, 1953.

Mr. JENSEN. The committee will come to order.

This morning, we will start the hearings on the different projects in the Bureau of Reclamation. We will take them up one by one as they appear in the justifications. We will finish the hearings on each project as we go, both construction, operation and maintenance, if there is any, for that particular project.

Data Showing Budget Picture for Bureau of Reclamation, 1954

We will put into the record the summary sheets for each project before we begin discussion of it. That is, the summary sheets which the Bureau of Reclamation prepared for the committee, giving a picture of the project and explaining the status of the project from the very beginning to the present time.

I would like to have you revise the tables on pages 277, 278, and 279 of the justifications, and pages 476 through 479, to conform with the revised budget recommended by Secretary McKay and insert them in the record.

Mr. Lineweaver. All right, sir, we will do that.

Mr. Jensen. Those tables will show the entire construction and rehabilitation program.

(The matter referred to follows:)

History of regular annual Appropriation Act, 1954

State	Project	Allowance by Budget Bureau	Revised estimate submitted to Budget Bureau by Department Mar. 4, 1953
General investigations		$6,250,000	$4,934,000
Construction and rehabilitation (allotments)		193,888,000	190,117,000
Alaska	Eklutna	12,791,000	12,791,000
Arizona	Gila	4,500,000	4,500,000
Arizona, California, Nevada	Colorado River front work and levee system	1,905,000	150,000
Arizona, Nevada	Boulder Canyon	373,000	373,000
California	Davis Dam	3,822,000	3,822,000
	Cachuma	6,510,000	6,510,000
	Central Valley	19,250,000	19,193,000
	Kern River	10,000	10,000
	Kings River	2,000	2,000
	Solano		
California, Oregon	Klamath	335,000	335,000
Colorado	Colbran		
	Colorado-Big Thompson	5,750,000	5,362,000
	Paonia	7,000	7,000
	San Luis Valley		
Idaho	Minidoka-American Falls power	853,000	
	Minidoka-North Side pumping	1,627,000	1,627,000
	Palisades	17,650,000	17,650,000
Montana	Hungry Horse	673,000	673,000
Montana, North Dakota	Fort Peck	350,000	350,000
New Mexico	Carlsbad		
	Middle Rio Grande		
	Vermejo	1,472,000	1,472,000
New Mexico, Texas	Rio Grande	529,000	529,000
Texas	Canadian River		
Utah	Provo River	380,000	380,000
	Weber Basin	6,776,000	6,776,000
Washington	Columbia River	21,930,000	21,930,000
	Yakima-Kennewick	4,000,000	4,000,000
	Yakima-Roza	881,000	881,000
Wyoming	Eden	1,141,000	1,141,000
	Kendrick	2,970,000	2,970,000
	Riverton	475,000	475,000
Various	Missouri River Basin	73,316,000	72,601,000
	Rehabilitation and betterment of existing projects	2,500,000	2,500,000
	Drainage and minor completion program	1,110,000	1,110,000

History of regular annual Appropriation Act, 1954—Continued

State	Project	Allowance by Budget Bureau	Revised estimate submitted to Budget Bureau by Department Mar. 4, 1953
Operation and maintenance (allotments)		$24,800,000	$24,800,000
Arizona, California	Imperial Dam	60,000	60,000
	Yuma	201,000	201,000
Arizona, California, Nevada	Boulder Canyon	1,654,710	1,654,710
	Colorado River front work and levee system	1,425,000	1,425,000
	Parker-Davis	2,254,400	2,254,400
California	Central Valley	4,608,413	4,608,413
California, Oregon	Klamath	334,600	334,600
Colorado	Colorado-Big Thompson	775,410	775,410
	San Luis Valley	12,000	12,000
Idaho, Oregon	Boise	558,260	558,260
Idaho- Wyoming	Minidoka	361,000	361,000
Montana	Hungry Horse	342,940	342,940
	Milk River	1,000	1,000
Nebraska, Wyoming	North Platte	220,200	220,200
Nevada	Boulder City	525,000	525,000
New Mexico	Carlsbad	3,000	3,000
	Middle Rio Grande	108,000	108,000
New Mexico, Texas	Rio Grande	1,197,594	1,197,594
Oklahoma	W. C. Austin	2,060	2,060
Oregon	Deschutes	201,500	201,500
Washington	Columbia Basin	3,682,900	3,682,900
	Yakima	550,000	550,000
Wyoming	Kendrick	118,670	118,670
	Riverton	127,400	127,400
Wyoming, Montana	Shoshone	183,200	183,200
Various	Missouri River Basin	3,571,743	3,571,743
	Soil and moisture conservation operations	920,000	920,000
	Halogeton (poisonous weed) control operations		
	Cooperative program with Department of Agriculture	800,000	800,000
General administrative expenses		5,250,000	5,250,000
Emergency fund, irrigation and power systems		1,000,000	1,000,000
Total		231,188,000	226,101,000

NOTE.—In addition, the permanent appropriations are as follows:		
Payments to States of Arizona and Nevada	$600,000	$600,000
Payments of interest on advances from Treasury	3,000,000	3,000,000
Payments to Farmers Irrigation District, North Platte project, Nebraska, Wyoming	8,000	8,000
Refunds and returns	125,000	125,000
Total	3,733,000	3,733,000

Construction and rehabilitation

State and projects	Actual fiscal year 1953 allotment	Estimated fiscal year 1954 allotment	Increase or decrease
Eklutna project, Alaska	$13,000,000	$12,791,000	−$209,000
Gila project, Arizona	5,582,000	4,500,000	−1,082,000
All-American Canal, Boulder Canyon project, California	1,221,229		−1,221,229
Colorado River front work and levee system, Arizona-California-Nevada	687,948	1,905,000	1,217,052
Boulder Canyon project, Hoover Dam and power-plant, Arizona-Nevada		373,000	373,000
Davis Dam project, Arizona-Nevada	554,330	3,822,000	3,267,670
Cachuma project, California	4,650,000	6,510,000	1,860,000
Central Valley project, California	32,327,642	19,250,000	−13,077,642
Kern River project, California		10,000	10,000
Kings River project, California		2,000	2,000
Solano project, California	3,000,000		−3,000,000
Colorado-Big Thompson project, Colorado	18,000,000	5,750,000	−12,250,000
Paonia project, Colorado		7,000	7,000
Minidoka project, American Falls Power division, Idaho		853,000	853,000
Minidoka project, North Side pumping division, Idaho	150,000	1,627,000	1,477,000
Palisades project, Idaho-Wyoming	9,900,000	17,650,000	7,750,000
Buffalo Rapids project, 2d division, Montana	107,038	(1)	−107,038
Fort Peck project, Montana-North Dakota		350,000	350,000
Hungry Horse project, Montana	12,570,000	673,000	−11,897,000
Sun River project, Greenfields division, Montana	34,000	(1)	−34,000
Middle Rio Grande project, New Mexico	1,538,000		−1,538,000
Tucumcari project, New Mexico	204,000	(1)	−204,000
Vermejo project, New Mexico		1,472,000	1,472,000
Rio Grande project, New Mexico-Texas	80,819	529,000	448,181
W. C. Austin project, Oklahoma	30,000		−30,000
Grants Pass project, Savage Rapids Dam, Oreg	700,000		−700,000
Klamath project, California-Oregon	237,000	335,000	98,000
Provo River project, Utah	2,270,000	380,000	−1,890,000
Weber Basin project, Utah	1,350,000	6,776,000	5,426,000
Columbia Basin project, Washington	19,680,000	21,930,000	2,250,000
Yakima project, Kennewick division, Washington	1,500,000	4,000,000	2,500,000
Yakima project, Roza division, Washington		881,000	881,000
Eden project, Wyoming	486,000	1,141,000	655,000
Kendrick project, 1st unit, Wyoming	3,750,000	2,970,000	−780,000
Riverton project, Wyoming	233,307	475,000	241,693
Shoshone project, Wyoming-Montana	216,000	(1)	−216,000
Missouri River Basin project	[2] 41,958,704	73,316,000	31,357,296
Rehabilitation and betterment of existing projects	1,779,974	2,500,000	720,026
Drainage and minor completion program		1,110,000	1,111,000
Total, construction and rehabilitation	[2] 177,797,991	193,888,000	16,090,009

[1] 1954 estimates for these projects are included in a new item listed as "Drainage and minor completion program."

[2] Includes anticipated allotment of $1 million to Missouri River Basin, phase E, whereas $962,582 was actually allotted.

Construction and Rehabilitation, Missouri River Basin

GENERAL STATEMENT

The Missouri River Basin project 1954 program will be financed by an allotment of $73,316,000 from the construction appropriation. With this allotment 15 units or divisions will be active in the construction stage plus necessary drainage and minor completion activities on 4 units which are functionally complete but which require a relatively minor amount of "cleanup" work. Investigation and preconstruction activity will continue as well as the cooperative activities with other agencies, all of which will be financed from this allotment. There follows a table showing allocation to Missouri River Basin units of 1953 actual allotment and 1954 estimated allotment.

Division or unit	Actual fiscal year 1953 allotment	Estimated fiscal year 1954 allotment	Increase or decrease
Missouri River Basin:			
Phase A:			
Angostura unit, Cheyenne division, South Dakota	$1,108,000	(1)	−$1,108,000
Bostwick division, Nebraska-Kansas	2,364,094	$4,500,000	2,135,906
Canyon Ferry, Helena-Great Falls division, North Dakota-Montana	4,754,000	957,000	−3,797,000
Cedar Bluff unit, Smoky Hill division, Kansas		30,000	30,000
Crow Creek unit, Three Forks division, Montana	400,000	673,000	273,000
Frenchman-Cambridge division, Nebraska	1,143,000	4,875,000	3,732,000
Fort Clark unit, Pumping division, North Dakota	57,000		−57,000
Jamestown unit, Missouri-Souris division, North Dakota	1,880,000	1,657,000	−223,000
Kirwin unit, Solomon division, Kansas	4,159,906	8,359,000	4,199,094
Lower Marias unit, Marias division, Montana	2,500,000	7,461,000	4,961,000
Missouri diversion unit, Missouri-Souris division, Montana-North Dakota	2,000,000	5,263,000	3,263,000
Rapid Valley unit, Cheyenne division, South Dakota	1,000,000	4,230,000	3,230,000
Savage unit, Yellowstone division, Montana	2,000		−2,000
Shadehill unit, Grand division, South Dakota		20,000	20,000
St. Francis unit, Upper Republican division, Colorado-Kansas		35,000	35,000
Transmission division	11,693,378	19,765,000	8,071,622
Webster unit, Solomon division, Kansas	1,500,000	6,080,000	4,580,000
Drainage and minor completion program		161,000	161,000
Subtotal, phase A	34,561,378	64,066,000	29,504,622
Phase B—Units ready for construction:			
Bluff unit, Bighorn Basin division, Wyoming	11,000	20,000	9,000
Charley Creek unit, Montana Pumping division, Montana		13,000	13,000
Glendo unit, Oregon Trail division, Wyoming		20,000	20,000
Glen Elder unit, Solomon division, Kansas		50,000	50,000
Hanover unit, Bighorn Basin division, Wyoming	9,000	52,000	43,000
Helena Valley unit, Helena-Great Falls division, Montana		40,000	40,000
Nickwall unit, Montana Pumping division, Montana	11,000	25,000	14,000
Owl Creek unit, Bighorn Basin division, Wyoming		30,000	30,000
Sargent unit, Middle Loup division, Nebraska	216,500	45,000	−171,500
Wilson unit, Smoky Hill division, Kansas		50,000	50,000
Yellowtail unit, Lower Bighorn division, Montana-Wyoming		35,000	35,000
Phase B—Units being prepared for construction	1,149,826	2,120,000	970,174
Subtotal, phase B	1,397,326	2,500,000	1,102,674
Phases C and D		2,000,000	2,000,000
Phase E	[2] 1,000,000		−1,000,000
Other departmental agencies	5,000,000	4,750,000	−250,000
Total, Missouri River Basin project	[2] 41,958,704	73,316,000	31,357,296

[1] 1954 estimate is included in a new item listed as drainage and minor completion program.
[2] Includes anticipated allotment of $1,000,000 to phase E, whereas $962,582 was actually allotted.

Operation and Maintenance

Breakdown of Allotments and Funds Advanced

Mr. Jensen. Revise and insert in the record the table on page 72 of the justifications which shows the operation and maintenance program.

Mr. Lineweaver. All right, sir; that will be done.

(The matter referred to follows:)

Fiscal year 1953 actual allotments and fiscal year 1954 estimated allotments and funds advanced

State and project	Allotment			Funds advanced			Total project			Justification page reference
	Fiscal year 1953	Fiscal year 1954	Increase or decrease	Fiscal year 1953	Fiscal year 1954	Increase or decrease	Fiscal year 1953	Fiscal year 1954	Increase or decrease	
Arizona-California:										73
Imperial Dam	$60,000	$60,000					$60,000	$60,000		76
Yuma	226,900	201,000	−$25,900	$17,390	$16,394	−$996	244,290	217,394	−$26,895	
Arizona-California-Nevada:										81
Boulder Canyon	1,553,000	1,654,710	101,710	24,697		−24,697	1,577,697	1,654,710	77,017	86
Boulder City, Nev	590,000	525,000	−65,000				590,000	525,000	−65,000	91
Colorado River front work and levee system	1,083,450	1,425,000	341,550				1,083,450	1,425,000	341,550	96
Parker-Davis	2,268,000	2,254,400	−13,600	154,040	248,310	94,270	2,422,040	2,502,710	80,670	
California:							3,349,750	4,608,413	1,258,663	101
Central Valley	3,349,750	4,608,413	1,258,663	119,530	119,530		119,530	119,530		
Orland				40,600	39,300	−1,300	40,600	39,300	−1,300	
California-Oregon: All-American Canal System, Imperial Division, Boulder Canyon project				235,400	235,400		570,000	570,000		107
California-Oregon:										112
Klamath	334,600	334,600					1 445,200	775,410	330,210	
Colorado:	1 445,200	775,410	330,210				7,650	8,000	350	
Colorado-Big Thompson				7,650	8,000	350	6,600	9,000	2,400	
Mancos				6,600	9,000	2,400	9,300	12,000	2,700	118
Pine River	9,300	12,000	2,700				588,900	579,260	−9,640	122
San Luis Valley	568,400	558,260	−10,140	20,500	21,000	500				
Idaho-Oregon: Boise				2,800	3,000	200	2,800	3,000	200	
Idaho-Washington: Rathdrum Prairie, Post Falls unit	362,000	361,000	−1,000	94,000	100,000	6,000	456,000	461,000	5,000	129
Idaho-Wyoming: Minidoka							195,100	342,940	147,840	137
Montana:	195,100	342,940	147,840	110,000	109,000	−1,000	110,000	110,000		141
Hungry Horse		1,000	1,000	2,500	2,500		2,500	2,500		
Milk River				4,777	4,924	147	4,777	4,924	147	
Missoula Valley, Big Flat unit				100,000	90,000	−10,000	321,400	310,200	−11,200	146
Sun River, Greenfields division	221,400	220,200	−1,200							152
Nebraska-Wyoming: North Platte				11,000	8,000	−3,000	11,000	11,000		157
New Mexico:		3,000	3,000					108,000	108,000	161
Carlsbad		108,000	108,000				2,210,300	2,232,594	22,294	168
Middle Rio Grande, channel rectification	1,197,300	1,197,594	294	1,013,000	1,035,000	22,000	105,221	8,060	−97,161	
New Mexico-Texas: Rio Grande		2,030	2,030	105,221	6,000	−99,221				173
Oklahoma: W. C. Austin							193,000	201,500	8,500	
Oregon:	193,000	201,500	8,500				11,000	11,100	100	
Deschutes, north unit				11,000	11,100	100	4,600	4,725	125	
Umatilla				4,600	4,725	125	95,500	102,000	6,500	
Vale				95,500	102,000	6,500				
Oregon-Idaho: Owyhee							2,635		−2,635	
South Dakota:				2,635		−2,635				
Belle Fourche										

Rapid Valley				5,100 10,500	5,000 10,500	−100	5,100 10,500	5,000 10,500	−100	
Utah: Provo River							3,109,000	3,682,900	573,900	177
Washington:							525,000	550,000	25,000	185
Columbia Basin	3,109,000	3,682,900	573,900							
Yakima	525,000	550,000	25,000						15,000	
Wyoming:					15,000	15,000		15,000	15,000	
Eden	[1] 130,000	118,670	−11,330		3,500	3,500	130,000	122,170	−7,830	192
Kendrick	[1] 171,600	127,400	−44,200				171,600	127,400	−44,200	197
Riverton	[1] 188,400	183,200	−5,200	3,000	3,000		191,400	186,200	−5,200	204
Wyoming-Montana: Shoshone				20,000	20,000		853,100	940,000	86,900	211
Various:					5,000	5,000	1,385,500	3,576,743	2,191,243	221
Soil and moisture conservation operations	833,100	920,000	86,900							
Missouri River basin project	[1] 1,385,500	3,571,743	2,186,243					800,000	800,000	231
Cooperative program with Department of Agriculture		800,000	800,000							
Total	[2] 19,000,000	24,800,000	[2] 5,800,000	2,222,040	2,235,183	13,143	[2] 21,222,040	27,035,183	[2] 5,813,143	100,800

[1] Excludes the following amounts allotted to the respective projects which are scheduled herein under Missouri River Basin project for integrated power operations:

Colorado-Big Thompson project	$843,250
Kendrick project	395,700
Riverton project	45,750
Shoshone project	100,800
Total amount from above projects scheduled under Missouri River Basin	1,385,500

[2] Includes $154,040 estimated unobligated balance, estimated savings on Parker-Davis project.

Construction and Rehabilitation

EKLUTNA PROJECT, ALASKA

Mr. Jensen. The first project which appears in the justifications is the Eklutna project in Alaska. We will insert at this point pages 1 and 2 of the special data and summary information which has been furnished to the committee, and pages 292 through 295 of the justification.

(The matter referred to follows:)

Eklutna Project, Alaska

CONSTRUCTION

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$6,620,488	$13,148,547	$12,863,211
Unliquidated obligations	222,073	−129,708	−72,211
Total obligations	6,842,561	13,018,839	12,791,000

HISTORY OF PROJECT DEVELOPMENT

Location

South central Alaska approximately 35 miles northeast of the city of Anchorage, Alaska.

Purpose

The development of hydroelectric power from the stored waters of existing Eklutna Lake. The project is to have an installed capacity of 30,000 kilowatts.

Authorization

Act of July 31, 1950 (Public Law 628, 81st Cong.), authorizing appropriation of $20,365,400 for construction and, in addition, such sums as may be necessary for operation.

Initial date

Planning, 1948; advanced planning, 1950; construction, 1951; date of functional completion of construction, fiscal year 1955; fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1951, $1,100,000.

COSTS

Original estimate cost	$20,365,400
Allocation of cost power	20,365,400
Present estimated cost	35,300,000
Allocation of cost power	35,300,000

REPAYMENT

Amount to be repaid and repayment period

Power	amount	$35,300,000
Regular repayment period		1954 to 2003
Total		50 years

Operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Power (kilowatts)			15,000	30,000
Power rates (mills per kilowatt-hour):				
Firm (estimated at 50-percent load factor)			10.6	10.6
Nonfirm (average)			6.0	6.0

CONSTRUCTION AND REHABILITATION

EKLUTNA PROJECT, ALASKA

Summarized financial data

Estimated total obligations	$35,251,695
Total obligations to June 30, 1952	6,842,561
Allotment, fiscal year 1953	13,000,000
Prior-year balance available	18,839
Total obligations, fiscal year 1953	13,018,839
Allotment, fiscal year 1954	12,791,000
Total obligation, fiscal year 1954	12,791,000
Balance to complete	2,599,295

JUSTIFICATION OF ESTIMATE

Authorization

The Eklutna project was authorized under the act of July 31, 1950 (Public Law 628, 81st Cong.).

Location

The project is located in south-central Alaska, approximately 35 miles northeast of the city of Anchorage, Alaska.

Description

The purpose of the project is the development of hydroelectric power from the stored waters of existing Eklutna Lake. Facilities of the project will include the Eklutna powerplant with appurtenant penstock, penstock tunnel, surge tank, tunnel inlet and tailrace; rehabilitation of existing Eklutna Dam; transmission lines to Anchorage and Palmer, Alaska; associated switchyards, substations and general facilities. The project is to have an installed capacity of 30,000 kilowatts.

Repayment

The entire construction cost of the Eklutna project is to be repaid from power revenues. Contract negotiations are in progress with the Anchorage Public Utilities, Chugagh Electric Association, and Matanuska Electric Association regarding wholesale contracts for the entire output of the project.

Status

Construction of the Eklutna project began in fiscal year 1951. As of June 30, 1953, the project will be approximately 55 percent complete. Construction will be under way on the Eklutna powerplant, tunnel, intake structure, penstock, Anchorage substation, and Palmer substation. Construction will have been completed on the Eklutna to Palmer and Eklutna to Anchorage 115-kilovolt transmission lines, and all of the construction facilities necessary for administration of project construction. These facilities will include warehouse, laboratory, housing, and related utilities for Government personnel engaged in construction administration.

When the 82d Congress adjourned, there was pending legislation providing for increasing the authorized appropriations. The legislation will again be recommended at the opening of the 83d Congress. Since preparation of this program, the Comptroller General has expressed certain views in his letter of August 22, addressed to the chairman of the House Subcommittee on Irrigation and Appropriations, affecting the program for 1953. The program for 1953 may be subject to modification depending on resolution of this matter by the Department.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes continuation of construction on the tunnel structures, powerplant, Palmer substation, and Anchorage substation. No new work will be started.

Justification

The power shortage which existed in the Eklutna project area at the time of project authorization has become increasingly acute with the increase of military activities in the Anchorage area. This shortage has in part precluded the expansion of the civilian economy at a rate sufficient to service the military effort. The entire Eklutna project electric-service area is now dependent upon an assortment of small and mostly obsolete steam, diesel, and hydroplants that in aggregate are undependable and insufficient to meet current and future demands. Power rates for energy thus generated are so high as to thereby discourage municipal and domestic developments; and the shortage itself positively precludes any additional industrial development in the area. The Eklutna project will in some measure overcome these conditions and will form a stabilizing base about which present power production can be integrated. The Eklutna project-construction program will greatly reduce the seriousness of the existing situation and materially help the development and defense of the Territory of Alaska.

The total estimated cost of the project has been increased from $33,800,000 to $35,300,000 (estimated total obligations, $35,251,695), by an order for changes to the prime contract for construction of the Eklutna tunnel. This order for changes was necessitated by encountering in the tunnel excavation quantities of water greatly in excess of those anticipated. To handle this large volume of water, it was necessary to provide a drainage channel in the bottom of the tunnel. Since this work was not contemplated at the time the original contract was let, it was necessary to negotiate with the contractor for the additional work.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Eklutna Dam and Reservoir	$110,000	$93,595	$16,405		
Eklutna power plant and intake	29,730,500	4,730,338	12,073,727	$10,163,232	$2,763,203
Power plant	(7,341,400)	(339,618)	(2,922,680)	(3,443,852)	(635,250)
Tunnel, intake, penstock, and tailrace	(22,389,100)	(4,390,720)	(9,151,047)	(6,719,380)	(2,127,953)
Eklutna power plant switchyard	813,000	15,219	126,081	609,958	61,742
Palmer substation	136,000	10,023	69,377	56,600	
Anchorage substation	704,000	9,491	243,097	401,412	50,000
Transmission line, New Eklutna to Palmer	390,000	313,756	76,244		
Transmission line, New Eklutna to Anchorage	685,000	179,135	505,865		
General property	2,731,500	600,969	248,022	1,882,509	
Total cost	35,300,000	5,952,526	13,358,818	13,113,711	2,874,945
Construction facilities		521,950	−142,178	−200,000	−179,872
Stores		122,177	3,497	−50,000	−75,674
Transfers, credits, and other expenditures	−48,365	23,835	−71,640	−500	
Total expenditures	35,251,695	6,620,488	13,148,547	12,863,211	2,619,449
Unliquidated obligations		222,073	−129,708	−72,211	−20,154
Total obligations	35,251,695	6,842,561	13,018,839	12,791,000	2,599,295
Method of financing:					
Allotment, fiscal year 1953			13,000,000		
Prior year balance available			18,839		
Allotments required				12,791,000	2,599,300

Mr. JENSEN. There is a request for this project of $12,791,000, which exceeds the authorization by $12,188,000. The language proposed in the bill would make 1954 appropriations available, only if

authorizing legislation is adopted by the Congress during this session of Congress.

We have discussed this project before, and, of course, this committee is not authorized to appropriate more money than is authorized for any project by the Congress of the United States, and this Eklutna project falls in that category.

Mr. Budge has been through the hearings on the proposed amendment to the authorizing legislation, and at the present time, Mr. Budge, I am sure, will have some questions to ask about this project.

Mr. Lineweaver, is there any statement which you would like to make?

Mr. LINEWEAVER. Mr. Markwell has a statement on the construction program, and after he has completed his statement, I will cover the legislative phases and the developments which have occurred since the appropriation was made last year.

(Discussion off the record.)

Mr. MARKWELL. Mr. Chairman, I have a prepared statement on the Eklutna project, which I would like to offer for the record, and then I will summarize the statement for the committee.

(The matter referred to follows:)

EKLUTNA PROJECT, ALASKA

The program for fiscal year 1954 on the Eklutna project, requiring funds in the amount of $12,791,000, includes the continuation of construction on the Eklutna tunnel and associated structures, power plant, and substations at Palmer and Anchorage. No new work will be started.

The act of July 31, 1950 (Public Law 628, 81st Cong.), which authorizes the Eklutna project, authorized the appropriation of $20,365,400. $19,861,400 has been appropriated to date, providing funds through fiscal year 1953. When the 82d Congress adjourned, legislation was pending before the Congress which would have provided for increasing the amount authorized to be appropriated. Similar legislation has been introduced in the 83d Congress and has been referred to the House Committee on Interior and Insular Affairs.

Last year we reported to this committee that the total estimated cost of the Eklutna project had been increased in $33,800,000. The increase was attributable to the tremendous impact on construction costs of rapidly increasing defense activities in Alaska, and a change in plan including a lowering of the level of the intake to the power tunnel. The change in plan resulted in an increase in annual firm power generation and it was shown that the project continued to be economically feasible. The committee was also advised that the Bureau was continuing to construct the project as expeditiously as possible to provide critically needed power for the rapidly expanding defense activities in Alaska. It was explained that although the estimated cost of the project greatly exceeded the amount authorized to be appropriated, expenditures under the contracts would be spread over several years so that there was ample time to obtain an increase in the authorization before expenditures beyond the $20,365,400 figure would be necessary.

On October 8, 1952, the Under Secretary of the Interior wrote to the chairman of this committee to report on developments since the close of the last session of the Congress. That letter enclosed an exchange of correspondence between the chairman of the House Subcommittee on Irrigation and Reclamation and the Comptroller General. The Comptroller General advised Mr. Engle that only those contracts that had been awarded prior to the time when the total face value of all contracts reached the sum of $20,365,400 were in full force and effect. Inasmuch as several contracts resulting in a total face value exceeding that amount had already been awarded, prompt efforts were made to find a means compatible with the Comptroller General's letter to avoid serious disruption of the construction schedule with attendant heavy losses. Such a means was found and cleared in advance with the Comptroller General which involved a reduction in the face amount of two contracts through the elimination of items of work not

scheduled to be performed by the contractor during the current fiscal year. The necessary negotiations with the contractors were carried through successfully and project construction has continued on schedule since that date with the total face value of all contracts remaining within the amount referred to in the authorizing act.

Conditions encountered on the project in November 1952 causing a further increase in total project costs necessitated recourse again to the same procedure that had been cleared with the Comptroller General in September, in order to permit work to proceed while keeping the total face value of contracts within the amount authorized to be appropriated. On March 2, 1953, the Secretary of the Interior again wrote this committee to report in full on these developments.

To summarize the letter briefly, it reported that quantities of water encountered since November 7, 1952, in the portion of the tunnel being constructed from the outlet end far exceeded those expected when the contract was awarded. No work at the downstream end of the tunnel was possible for several weeks. It was determined that in view of the greatly increased flow of water to be expected during the remainder of the construction of the tunnel it was in the Government's interest to negotiate a change in the contract to provide a different means of handling the water than that specified originally. This involves construction of a drainage channel in the bottom of the tunnel in lieu of pumping the water from the tunnel. The cost of the drainage channel increases the total cost by $1,500,000, but by eliminating the cost of pumping during the remainder of the construction period the overall cost to the Government will be less than would be the case if the increased flows were handled by pumping, as originally planned. In order to incorporate the requirement for constructing the drainage channel in the contract it was necessary to eliminate other work not scheduled for performance during the current fiscal year and for which no funds had been allotted in order that the contract face value would remain essentially unchanged. These negotiations with the contractor were successfully concluded and the work in the tunnel is again proceeding.

In each change order under the tunnel contract, the change negotiated last September, as well as the recent change due to water conditions, the contractor has agreed to a reservation by the United States, unilaterally, of the right to reinstate eliminated work items at original bid prices in the event the Congress takes action resulting in continuation of the project, provided this right is exercised not later than May 1, 1953. This date was insisted upon by the contractor because delay beyond such date would make an additional construction season necessary to complete the work, with a consequent increase in his costs. In the event the Government is unable to exercise the option because action has not been taken by the Congress prior to May 1, the eliminated work items will have to be performed by other means, when and if Congress acts favorably, such as by separate contracts or at new prices negotiated with the present contractors. This undoubtedly would result in substantially higher costs. Accordingly, we earnestly hope that there may be favorable action prior to May 1, 1953.

On March 3, 1953, Secretary McKay transmitted to the Congress a draft of bill to amend section 6 of the act of July 31, 1950, relating to appropriations for construction of the Eklutna project. I have a copy of that transmittal which I would like to submit to the committee. Mr. Bartlett, the Delegate from Alaska, had previously introduced a bill, H. R. 1374, to increase the amount authorized to be appropriated for the Eklutna project. The Subcommittee on Territories of the House Interior and Insular Affairs Committee has been holding hearings on Mr. Bartlett's bill. The committee has not yet completed its consideration or reported on the bill. The subcommittee had the pertinent documents in the committee's files assembled and printed in the form of a committee print for ready reference during the recent hearings. I would like to submit a copy for the committee's files.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., March 3, 1953.

Hon. JOSEPH W. MARTIN, Jr.,
Speaker of the House of Representatives,
Washington, D. C.

MY DEAR MR. SPEAKER: Attached for consideration by the Congress is a draft of bill to amend section 6 of the act of July 31, 1950, relating to appropriations for construction by the Secretary of the Interior of the Eklutna project, Alaska.

I request that this draft of bill be referred to the appropriate committee for consideration and recommendation that it be enacted.

When the Eklutna project was considered for authorization by the House Committee on Public Lands and the Senate Committee on Interior and Insular Affairs in 1949–50, the estimated cost of the project, based upon 1948 prices, was $20,365,400. This estimate took into consideration the cost differential between continental United States and Alaska, as set forth in a favorable report on the project submitted to the Congress on September 14, 1949, after clearance by the Bureau of the Budget. The Congress wrote this figure of $20,365,400 into the act authorizing construction of the Eklutna project (act of July 31, 1950, 64 Stat. 382) and described the project as one to be built "at an estimated cost of $20,365,400."

The principal features of the project include a 30,000-kilowatt powerplant, penstock, tunnel, surge tank, and related facilities; the rehabilitation of the existing Eklutna Dam; transmission lines and necessary switching facilities to transmit power from the Eklutna powerplant to industrial and military loads in the vicinities of Anchorage and Palmer, Alaska; and the purchase from the city of Anchorage of the existing Eklunta development and transmission facilities between the development and Anchorage.

Subsequent to its authorization, it became apparent, from examination of bids for the major feature of the project, the Eklutna tunnel, that the project could not be completed at the estimated cost of $20,365,400. Examination of the bids revealed that the high prices quoted, as compared to the estimate, were attributable to rising costs generally and particularly to unfavorable contracting conditions prevailing in the Alaskan area. The Department had been aware of the generally increasing costs in the United States and Alaska subsequent to the preparation of the preliminary estimate, but it was the tremendous impact of the rapidly expanding defense activities on construction costs in Alaska and the recent upsurge of industry accompanying the military program that accounted for construction prices far beyond expectation.

It was determined in September of 1951, by the former Commissioner of Reclamation with the concurrence of the former Secretary, that it was in the Government's interest to proceed with construction and work is well under way. As the circumstances now exist, I believe that the project should be carried to completion and accordingly recommend that the proposed amendment be enacted by the Congress to authorize the necessary additional appropriations.

Our study of current prices prevailing in Alaska, of the conditions under which the construction will be performed, and the prospective economic situation in the immediate future leads us to conclude that the total cost of the project will be about $35,300,000 which is approximately $14,900,000 more than the original estimate. This estimate assumes that there will be no unusual costs occurring from a slow-down or delay in progress on the prime features of the project. Such an unpredictable change has occurred recently, causing the current estimate of total cost to be increased from 33,800,000 to $35,300,000. This increase was a direct and unavoidable consequence of large flows of water encountered by the construction contractor in the outlet portion of the Eklutna tunnel. The volume of water to be disposed of far exceeds the flows anticipated at the time the contract was awarded, and it has been necessary to change the contract to provide for a different method of handling the water. This development has been reported on in detail to the Committee on Interior and Insular Affairs and to the Subcommittee on Interior Appropriations. Careful analysis of this estimate in relation to the potential earning power of the project reveals that the project remains financially feasible.

Further detailed study of the project has indicated that by dropping the intake of the tunnel somewhat lower than was contemplated when the project was authorized and by greater operating draw down of the reservoir the annual firm energy for sale will be increased by 41 million kilowatt-hours. On the basis of 10 mills per kilowatt-hour the net annual return from the increased firm and total generation will be approximately $400,000. Over a 50-year repayment period this is equivalent to $20 million, which exceeds the estimated increase in project costs. The full sale of power from this plant is well assured since applications for immediate consumption already exceed the total plant capacity.

The power shortage which prevailed at the time of project authorization has become increasingly serious. The Anchorage area is dependent for its power supply upon a combination of small steam, hydro and diesel plants. Some of these plants are quite inadequate, very high in cost and in poor operating condition. Occurrence of mechanical failures coupled with total lack of reserves has frequently rendered the situation acute to the point of dropping loads. Lack of any margin of supply and high power rates positively precludes much needed

potential industrial and rural development. The Eklutna project will in a large measure assist in overcoming such conditions and will provide a stable facility with which the present power production can be integrated.

After considering all facets of the problem existing in the area, including the present and continually increasing need for power, and after having determined that the project is still feasible in the face of high construction costs, it is my conclusion that it is in the Government's interest to continue with the current construction schedule, while not exceeding the sum of $20,365,400 in the face value of necessary contracts, pending an opportunity for congressional action. For these reasons, I recommend early enactment of a bill along the lines of the attached draft.

You will note that this draft, if enacted, will permit the Appropriations Committees of the Senate and the House of Representatives to determine the amount actually required to be appropriated for construction of the Eklutna project instead of fixing a ceiling on authorized appropriations as provided in the present law. The purpose of this suggested language is to permit the Appropriations Committees and this Department to take account of unpredictable and unforeseeable changes in cost. While I believe that all major items of work involving factors which could not be predicted at the time of preparation of the report upon which the act of July 31, 1950, was predicated are now accounted for, no one can give an ironclad guarantee that the $35,300,000 figure or any other precise figure will, in all circumstances, hold firm. It is for this reason that I recommend that the Eklutna Act be amended along the lines here indicated.

The Committees on Interior and Insular Affairs and the Subcommittees on Interior Appropriations have been advised currently of developments in connection with this project.

The Bureau of the Budget has advised that there would be no objection to the transmission of this letter and proposed legislation to the Congress.

Sincerely yours,

DOUGLAS MCKAY,
Secretary of the Interior.

A BILL To amend section 6 of the Act of July 31, 1950, relating to appropriations for construction by the Secretary of the Interior of the Eklutna project, Alaska

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 6 of the Act of July 31, 1950 (64 Stat. 382), is amended to read as follows: "There are hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be required to carry out the provisions of this Act."

Mr. JENSEN. All right, Mr. Markwell, you may proceed.

Mr. MARKWELL. As you have stated, we are requesting a total amount of $12,791,000 to carry on work on this project in 1954. The cost of the project, since we appeared before the committee last year, has increased from $33,800,000 to $35,300,000, because of excessive water encountered in the tunnels.

This money is needed to carry on the work in an orderly fashion, and, as I have indicated, my statement includes a copy of the committee print No. 2 of the Committee on Interior and Insular Affairs, and also a letter from Secretary McKay to the Speaker of the House, covering his recommendation that an additional authorization be granted by the Congress.

The project will be completed, or can be completed, as we see it, in 1955 with an additional appropriation of $2,600,000. The powerplant produces 30,000 kilowatts of power.

Mr. JENSEN. Does that conclude your statement?

Mr. MARKWELL. Yes, sir.

Mr. BUDGE. Mr. Chairman, I do not want to dwell at any great length on this project.

I think that the Bureau feels that it was in error, and I know that I feel that the Bureau was in error, in entering into contracts, which

obviously, if the entire project were carried out, were in excess of the authorization by the legislative committee. I think that the language, as proposed in the bill, will correct that situation; and it is, I think, the prerogative of the legislative committee to determine the actual merits for further construction.

I would like to know this: On the basis of your last estimates and your justifications, what will be your cost per kilowatt-hour on this project? I do not mean the capacity of the plant, but the actual cost per kilowatt-hour of the kilowatts which you will sell?

Mr. McPHAIL. I might answer that for you.

Taking the cost as that amount which is necessary to repay the $35,300,000 project estimate, with 2½ percent interest in 50 years, plus all operation and maintenance costs, it will take a rate of 10.6 mills per kilowatt-hour; for firm power delivered at the end of the transmission lines.

Mr. BUDGE. Do you include in that such items as depreciation? You have your interest included, but do you include depreciation and other items of that nature?

Mr. McPHAIL. Not as such. We include the interest and the repayment of the funds advanced and an amount to take care of such replacement in equipment as will be required during the payout period, as well as the actual operation and maintenance costs. It is an amortizing type of procedure, rather than a depreciation type.

Mr. BUDGE. How would that cost compare with the building of a steam plant in Alaska where we have fuel reserves?

Mr. McPHAIL. According to all information I have, it is considerably lower cost than building a steam plant.

Mr. BUDGE. It is my understanding that there is a very extensive deposit of coal almost adjacent to this project, is that correct?

Mr. McPHAIL. That is correct. In fact, there are several of them within a radius of some 25 or 30 miles of this plant.

Mr. BUDGE. With relation to this 10.6 mills, what is your estimate on steam construction, with the location of the coal beds being right at hand, so to speak?

Mr. McPHAIL. The best information I have is that the total overall cost of the steam development would be about 17 mills per kilowatt-hour.

Mr. LINEWEAVER. Mr. Chairman, I will supplement Mr. Markwell's statement, just to bring up to date for the record the legislative status of the proposal to increase the authorization to $35,300,000.

The House Interior and Insular Affairs Committee, through its Subcommittee on Territories, has been holding hearings this session on the bill to authorize the increase in the amount of appropriations. Those hearings have been going on intermittently for the last month, and the last one was on Tuesday of this week, at which time the committee went into executive session, and is now having its staff prepare a series of questions which will illicit direct, pertinent information, in which the committee members were interested.

With reference to the comment of Mr. Budge as to the position of the Bureau with respect to awarding contracts which totaled in excess of the $20,365,000 authorization in existing law, I desire to point out the changes in committee print No. 2, which is submitted as a part of

Mr. Markwell's statement, and to show that without objection from the Comptroller General we have come within the authorization by renegotiation of certain contracts to reduce the total face value of the contracts.

Mr. BUDGE. Mr. Lineweaver, that was not correct at the time the contracts were entered into, was it?

Mr. LINEWEAVER. That is right. We have followed to the letter the ruling of the Comptroller General and worked out this renegotiation proposition in accordance with our understanding of the Comptroller General's position.

I may say further, with regard to Secretary McKay's letter of March 3 to which Mr. Markwell referred, that the Secretary has taken cognizance of the situation. The Secretary went into the matter quite thoroughly and has given that approval, as expressed in his letter of March 3 to the Speaker of the House and to the President of the Senate. All of the facts that Mr. McPhail referred to with respect to the payout have been laid before the House Interior and Insular Affairs Committee.

Mr. BUDGE. I am happy that the Bureau has been able to renegotiate those contracts to bring itself within the authorization which was given to it by the Congress.

This is just a situation, Mr. Chairman, where the Congress of the United States authorized the Bureau to build this plant at a specific figure, and quite early in the game it became apparent that it could not be constructed within the authorization figure, but the Bureau went ahead and let contracts, which were actually in excess of the authorization, knowing at the time that they entered into those contracts that they would have to enter into additional contracts which would be far in excess of the authorization.

I am happy, as I say, that by renegotiation they have been able to bring themselves—at least so far as the contracts that have been let is concerned—back within the authorization given them by the Congress.

Mr. LINEWEAVER. I might add that we are hopeful that this legislative situation can be straightened out by May 1, as that is the date of deadline for the reinstatement of the contracts, which will result in prevention of higher costs for the completion of the project.

GILA PROJECT, ARIZONA

Mr. JENSEN. The next project is the Gila project in Arizona. We will insert in the record at this point pages 3 through 5 of the special data requested and pages 297 through 302 of the justification.

(The matter referred to follows:)

GILA PROJECT, ARIZONA

Construction

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$32,361,531	$7,388,217	$4,970,000
Unliquidated obligations	882,044	−352,044	−470,000
Total obligations	33,243,575	7,036,173	4,500,000

HISTORY OF PROJECT DEVELOPMENT

Location

Southwestern Arizona, in the southern part of Yuma County. Project works extend from Imperial Dam on the Colorado River to approximately 10 miles south of Yuma, Ariz., and east along the lower reach of the Gila River to approximately 50 miles east of Yuma.

Purpose

Irrigation.

Authorization

Finding of feasibility dated June 8, 1937, by the Secretary of the Interior and approved by the President on June 21, 1937.

Reauthorization

By the act of July 30, 1947 (61 Stat. 628, Public Law 272, 80th Cong.).

Initial date

Planning, 1934.
Advanced planning, 1935.
Construction, 1935.

Repayment costs per acre

Federal investment per acre	$436
From irrigators	436
From power revenue	----
Annual water users charges:	
Construction	$7.25
O. and M.	9.25
Total	16.50

Gross crop income per acre resulting from project irrigation (actual for calendar year 1951), $180.

OPERATIONS

Schedule of operations

Date of functional completion of construction, fiscal year 1956.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1936, $2,000,000.

COSTS

Original estimated cost	$19,474,964
Allocation of cost irrigation	19,474,964
Present estimated cost	50,083,860
Allocation of cost irrigation	50,083,860

REPAYMENT

Status of repayment contract negotiations: Contracts have been executed with Unit B and Welton-Mohawk Irrigation and Drainage Districts. Contract with North Gila Valley Irrigation District to be executed in 1953. Contract for Yuma Mesa division to be negotiated before expiration development period for public lands in 1956.

Amount to be repaid and repayment period: Authorizing legislation provides for full reimbursement Gila project costs within 60 years following close of development periods for irrigation blocks not exceeding 10 years. Repayment contract of 1952 with Wellton-Mohawk Irrigation and Drainage District ($42 million) contemplates establishment of a number of irrigation blocks during the next 5 years. Repayment contract of January 15, 1953, with Unit B Irrigation and Drainage District provides for repayment of $966,090 in the next 60 years. Proposed $325,000 repayment contract with North Gila Valley Irrigation District involves repayment in 60 years after execution of the contract sometime in 1953. A repayment contract is scheduled for execution with the water users of the Yuma Mesa division prior to expiration of the 10 year development period for the first irrigation block in 1956.

Repayment of costs allocated to irrigation:	
Water users	$50,083,860
Total	50,083,860

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full	20,106	31,836	49,506	92,700
Supplemental	1,687	11,574	13,224	22,300
Total	21,793	43,410	62,730	115,000

CONSTRUCTION AND REHABILITATION

Gila Project, Arizona

Summarized financial data

Estimated total obligations		$54,183,376
Total obligations to June 30, 1952		33,243,575
Allotment, fiscal year 1953	$5,582,000	
Prior year balance available	1,454,173	
Total obligations, fiscal year 1953		7,036,173
Allotment, fiscal year 1954	$4,500,000	
Total obligations, fiscal year 1954		4,500,000
Balance to complete		9,403,628

JUSTIFICATION OF ESTIMATE

Authorization

The project was initiated with funds allotted under the National Industrial Recovery Act (48 Stat. 195) and the Emergency Relief Appropriation Act of 1935 (48 Stat. 115). A finding of feasibility dated June 8, 1937, by the Secretary of the Interior was approved by the President on June 21, 1937. The project was reauthorized by the act of July 30, 1947 (61 Stat. 628, Public Law 272, 80th Cong.).

Location

The project is located in southwestern Arizona, in the southern part of Yuma County. Project works extend from Imperial Dam on the Colorado River to approximately 10 miles south of Yuma, Ariz., and east along the lower reach of the Gila River to approximately 50 miles east of Yuma.

Description

The project as originally authorized included 150,000 acres in the vicinity of Yuma, Ariz. However, the project as presently constituted includes 25,000 acres on the Yuma Mesa, 15,000 acres in the North and South Gila Valleys, near Yuma, and 75,000 acres in the Wellton-Mohawk division, beginning some 12 miles east and terminating approximately 50 miles east of Yuma. The primary purpose of the project is to provide a full water supply to 92,700 acres of arid lands and a supplemental supply to 22,300 acres of land presently served either by pump irrigation or by diversion from Laguna Dam. All but 15,000 acres of the land included in the project is at an elevation too high to be served by gravity flow from the diversion point at Imperial Dam, a condition which has required the construction of four main canal pumping plants to deliver water to the distribution systems.

Repayment

A contract, dated March 4, 1952, was executed with the Wellton-Mohawk Irrigation and Drainage District for the maximum repayment obligation of $42 million. Negotiations have been under way for boundary revisions, and are now sufficiently advanced to permit the scheduling of repayment contract execution by the Unit B Irrigation and Drainage District during February 1953, and by the North Gila Valley Irrigation District during March 1953. There is no formal water users organization of landowners on the partially developed Yuma Mesa; however, it is anticipated that an organization competent to contract with the United States will be available by 1956, the tentative scheduled date for execution of repayment contract for that area.

Status

As of June 30, 1952, construction was 99 percent complete on the project common features and on works to serve 20,106 acres on the Yuma Mesa. Construction of the Wellton-Mohawk division main canal and its three pumping plants, with their initial installation of pumps and motors was essentially completed, and use of water from the completed portions of the Mohawk and Wellton canals was granted under temporary licenses to satisfy the demand for fresh irrigation water. By June 30, 1953, construction will be complete on the Mohawk Canal and essentially complete on the Wellton Canal. Construction will be sufficiently well advanced on the Mohawk unit lateral system to permit initial delivery of water to 15,400 acres. During fiscal year 1953 construction will also be under way on the Wellton unit, Dome unit and Wellton-Mohawk Canal unit lateral systems. Initiation of action to procure additional pumps and motors to complete the installation in the main pumping plants will be undertaken in fiscal year 1953 to insure the availability of their capacity by June 1955 to meet irrigation requirements on lands under completed distribution system units. A total of 81 farm units, comprising 10,360 acres of public land, have been opened to entry on the Yuma Mesa, and 28 farm units of 3,700 acres in the Wellton-Mohawk division will have been made available for settlement by June 30, 1953.

Work proposed, fiscal year 1954

Completion of construction of the Wellton Canal in fiscal year 1954 will complete the entire main canal system for the Wellton-Mohawk division. Progress payments will be made on contracts for procurement of additional pumps and motors from funds obligated in fiscal year 1953. Major program activity during fiscal year 1954 will be on continuation of construction on the Mohawk, Wellton, Dome and Wellton-Mohawk Canal units distribution systems. By June 30, 1954, construction will be complete on distribution facilities to serve 34,800 acres and substantially complete for an additional 25,700 acres. Studies on underground water conditions will continue and detailed plans will be started on power supply facilities for the Texas Hill pumping plants and distribution system relief pumps. Construction of water users headquarters building will be completed and cooperation with Agriculture Department agencies on the completed development farms will continue. Public land settlement activities will continue and 59 farm units, totaling 8,800 acres, are scheduled for settlement during fiscal year 1954 in the Wellton-Mohawk division area.

Justification

Continuance of construction of the irrigation works of the Gila project as scheduled is necessary to meet the continuously increasing demand for fresh irrigation water for crop production in the Wellton-Mohawk division. Farmers whose lands are adjacent to completed reaches of the main canals during the summer crop season of 1952 irrigated approximately 10,000 acres of land from privately constructed connections, permitted under special licenses. The continuing demand for sweet irrigation water is also evidenced by the land leveling and farm development activity taking place in the distribution system areas coincident with construction of laterals. Complete development of the farming area is expected to follow closely upon the availability of water from completed laterals.

The interest shown by landowners in early development of their farms necessitated the decision to schedule initiation of procurement action ofr additional pumps and motors for Wellton-Mohawk pumping plants Nos. 1, 2, and 3 in fiscal year 1953. The long period of time required to fabricate the 217 to 240 cubic-feet per second capacity pumps and the 1,100 to 3,000 horsepower motors will preclude their availability for installation until late in current year 1954. Installation of the additional pumps and motors is scheduled in the last half of fiscal year 1955 to insure the availability of complete pumping plant capacity by July 1955, when it will be required to serve the area under constructed distribution systems.

The lands of this project are favorably situated for high yields of such crops as alfalfa, cotton, flax, bermuda seed, and many varities of vegetables which are in great demand. Winter pasture and animal feeding on forage grown by irrigation is an important use of the lands. The growing season extends throughout the year.

Demand for public lands on the project exceeds the supply and as soon as water is available and the lands are opened to entry they are placed in production.

Thus early completion of the construction program will permit the economical development of the area to proceed without delay and will hasten the date when the Government will commence to receive payment of the construction

costs from the water users who have executed repayment contracts and those who are due to execute repayment contracts prior to completion of the work.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
CONSTRUCTION PROGRAM					
Project common features	$3,610,927	$3,591,992	$18,935		
Diversion works, 2,200 cubic feet per second	913,052	913,052			
Gravity main canal, station 0–793, 2,200 cubic feet per second	2,607,075	2,607,075			
Drains	90,800	71,865	18,935		
Yuma Mesa division	10,206,641	9,396,593	166,419	$81,500	$292,129
Yuma Mesa pumping station, 700 cubic feet per second	847,439	813,630	33,809		
Gravity main canal, station 793–1100, 2,200 cubic feet per second	413,506	413,506			
"A" canal, 420 cubic feet per second	829,163	823,387			5,776
"B" canal, 280 cubic feet per second	402,029	401,856			173
"A" laterals	1,117,358	1,074,287	32,610		10,461
"B" laterals	2,054,858	1,522,107	20,000	25,000	487,751
North Gila Valley laterals	16,599	11,599	5,000		
Drains	140,000	79,172	15,000	12,000	33,828
Farm unit development	4,079,894	3,966,593	60,000	44,500	8,801
Yuma housing	252,933	252,933			
Service equipment and miscellaneous	52,862	7,523			45,339
Wellton-Mohawk division	36,266,292	16,981,860	6,660,863	4,251,500	8,372,069
Pumping plant No. 1, 1,300 cubic feet per second	1,448,350	1,101,090	130,660	120,000	96,600
Pumping plant No. 2, 1,200 cubic feet per second	1,590,356	1,243,096	130,660	120,000	96,600
Pumping plant No. 3, 900 cubic feet per second	1,258,879	1,072,180	78,665	60,000	48,034
Pumping plant, Texas Hill No. 1, 120 cubic feet per second	159,030	2,030			157,000
Pumping plant, Texas Hill No. 2, 40 cubic feet per second	80,021	1,021			79,000
Wellton-Mohawk Canal, 1,300 cubic feet per second	4,888,319	4,734,319	154,000		
Mohawk Canal, 900 cubic feet per second	8,344,196	5,937,037	1,124,318	5,000	1,277,841
Wellton Canal, 300 cubic feet per second	2,525,566	1,425,566	991,600	108,400	
Mohawk unit, laterals	6,499,348	670,869	3,000,000	1,709,100	1,119,379
Wellton unit, laterals	1,965,978	57,462	615,900	881,600	411,016
Dome unit, laterals	2,281,449	52,817	100,000	900,000	1,228,632
Texas Hill unit, laterals	1,246,082	18,059			1,228,023
Wellton-Mohawk Canal unit, laterals	549,008	8,245	59,564	207,500	273,699
Ralph's Mill unit, laterals	894,142	12,488			881,654
Drains	1,011,600	49,865	15,000	25,000	921,735
Farm unit development	353,044	183,700	31,000	28,000	110,344
Valley development farm	103,280	1,772	59,708	5,200	41,600
Mesa development farm	107,332	784	59,748	5,200	41,600
W–M transmission lines system and substation, 34.5-kilovolt	308,312		2,500	1,500	304,312
Wellton housing	497,000	409,460	62,540	25,000	
Service equipment and miscellaneous	55,000				55,000
Water users building	100,000		50,000	50,000	
Total cost	50,083,860	29,940,445	6,846,217	4,333,000	8,964,198
Construction facilities		394,359	6,000	−25,000	−375,359
Stores		461,474	−150,000	−90,000	−221,474
Project investigations	132,516	132,516			
O. & M. during construction	1,402,000	436,467	386,000	345,738	233,795
Transfers, credits and other expenditures	2,565,000	996,270	300,000	406,262	862,468
Total expenditures	54,183,376	32,361,531	7,388,217	4,970,000	9,463,628
Unliquidated obligations		882,044	−352,044	−470,000	−60,000
Total obligations	54,183,376	33,243,575	7,036,173	4,500,000	9,403,628
Method of financing:					
Allotment, fiscal year 1953			5,582,000		
Prior year balance available			1,454,173		
Allotments required				4,500,000	9,404,000

Mr. JENSEN. You are asking for $4,500,000 for this project for fiscal year 1954.

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. I note that no contract with the Water Users of the Yuma Mesa division will come into being until 1956, according to the justifications.

Construction for that division will be completed in 1953 and apparently there will be water ready for use on that project not later than this year some time.

Why have not contracts already been entered into with the water users?

Mr. LINEWEAVER. I would first like to submit a brief statement, Mr. Chairman, on the construction progress with respect to the entire project.

Mr. JENSEN. We will be glad to have it.

(The matter referred to follows:)

GILA PROJECT, ARIZONA

The Gila project in southwestern Arizona includes lands on the Yuma Mesa adjacent to the city of Yuma and along 52 miles of the lower Gila River prior to the junction with the Colorado River. These project lands are grouped in two principal divisions: The Yuma Mesa division consisting of 25,000 acres on the Yuma Mesa and 15,000 acres in the North and South Gila Valleys; and the Wellton-Mohawk division containing 75,000 acres lying along both sides of the Gila River between the Yuma and the Mohawk Mountains.

By the end of the fiscal year 1953 virtually all work on the project's common features and the irrigation system on the Yuma Mesa division will have been completed and in operation with the only remaining activities consisting of making connections for the Yuma Mesa B laterals and a small amount of drainage and farm development work. On the Wellton-Mohawk division, the Wellton-Mohawk main canal and the Mohawk Canal will be completed, and work will be in progress on the Wellton Canal. Additional pumps, motors, and auxiliary equipment for pumping plants Nos. 1, 2, and 3 of the Wellton-Mohawk main canal will have been contracted for to meet the demand for additional quantities of irrigation water which has developed more rapidly than had been expected. Work will also be in progress on units of the distribution systems to be served by the Mohawk and Wellton Canals.

The construction program for fiscal year 1954 provides for a constant rate of construction accomplishment on the Wellton-Mohawk division. The primary canal systems will be largely completed and construction will be well advanced on the distribution systems of the Mohawk, Wellton, and Dome areas. By the end of the fiscal year distribution facilities will have been completed for about 34,800 acres and sufficient work will have been performed on additional facilities to serve another 25,700 acres. Studies on underground water conditions will continue and detailed plans will be started on power-supply facilities for the Texas Hill pumping plants and distribution system relift pumps to serve an area of approximately 6,100 acres lying at the eastern extremity of the project. Construction of a water users' headquarters building will be completed and work will continue under cooperative arrangements with Agriculture Department agencies on the established development farms. Public-land settlement activities will continue. While the fiscal year 1954 budget justification now before you shows that 59 farm units totaling 8,800 acres are scheduled for settlement during that period on the Wellton-Mohawk division, more recent information indicates that 39 farm units containing 5,700 acres will be a more likely accomplishment.

A repayment contract dated March 4, 1952, providing for a maximum repayment obligation of $42 million has been executed with the Wellton-Mohawk Irrigation and Drainage District. This was the largest repayment contract ever executed up to that date between the Bureau of Reclamation and a water users' organization for the repayment of costs incurred in the construction of a Federal reclamation project. A repayment contract was executed on January 15, 1953, with the Unit B Irrigation and Drainage District and execution of a repayment

contract by the North Gila Valley Irrigation District is expected to take place this spring. As soon as a water users' organization can be organized on the Yuma Mesa which is competent to contract with the United States for the repayment of construction costs applicable to that area, negotiations will be started. It is anticipated that such an organization will be formed by 1956.

Accomplishment of a vigorous program in fiscal year 1954 is needed in the light of the rapidly rising demand for additional water as attested by the privately constructed canal connections to the completed canal system in the Wellton-Mohawk area. There is now a possibility that 27 percent of the project area will be ready to take water prior to completion of any substantial portion of the lateral system.

As scheduled in the total program for the project, construction of the main canal and distribution systems for the presently contemplated development will be completed to provide an adequate water supply for all irrigable lands by the end of fiscal year 1957.

SETTLEMENT PROGRAM—GILA PROJECT

The settlement program on the Yuma Mesa division of the Gila project is substantially completed: 54 public-land farm units comprising 4,940 irrigable acres having been opened to settlement in 1948 while 27 farm units comprising 4,030 irrigable acres were opened to settlement in 1952.

The settlement program on the Wellton-Mohawk division is just getting under way. The first land opening is scheduled for the last half of fiscal year 1953 when 28 farm units comprising 3,887 irrigable acres will be offered for sale with veterans having preference. Because a large part of the area which is being opened for settlement was formerly privately owned land which was acquired for settlement purposes, the units are being sold to settlers under the provisions of Public Law 102, 81st Congress, rather than being homesteaded. Initially it was planned that only 8 units would be opened in 1953 and 59 in 1954. However, it was found that progress of construction would permit the opening in 1953 of 20 additional units, thereby reducing from 59 to 39 the units to be opened in 1954. These 39 units to be opened in 1954 comprise 5,700 acres. Additional land openings on this division are contemplated each year for the next few years.

The new settlers on the Wellton-Mohawk division as well as the private landowners whose land is being initially supplied with Colorado River water will be faced with many problems of land development and irrigation practices. To aid in supplying needed technical information to farmers in the area, two development farms are being established. The major portion of each farm will be devoted to practical demonstrations of irrigation farming, while a minor portion will be made available to the University of Arizona, the Bureau of Plant Industry, and the Soil Conservation Service for experimental work.

Mr. LINEWEAVER. As you stated, Mr. Chairman, there has been no contract on the Yuma Mesa division, although one has been entered into with the Wellton-Mohawk irrigation division for the full repayment of the cost of that allocated to that district in the sum of $42 million.

With respect to the Yuma Mesa division, that is a public-land development and is being settled. We are now pressing the settlers for the organization of an irrigation district under the Arizona law, and hope to beat that date of 1956 for the execution of a repayment contract for the Yuma Mesa division. You will understand that, because it is a public-land project, no repayment contract is required in advance. The settlement has progressed fairly well on this public land, and it is all being settled by veterans. A few more of the farms are yet to be opened.

There will be 39 units to be opened in 1954, covering about 5,700 acres, and there will be additional land openings each year. The settlers have an informal organization with which we are negotiating for the formation of an irrigation district, which will assume the repayment of the reimbursable costs of the Yuma Mesa division.

Mr. JENSEN. When is this project to be completed?

Mr. LINEWEAVER. About 1957.

Mr. BUDGE. What is the acreage allotment for each one of the units?

Mr. LINEWEAVER. The average is something like 80 to 100 acres. The size is based on the land classification in order to make it an economical unit.

Mr. BUDGE. Would you explain to the committee just how you determine the size of the particular unit so as to make it an economical unit? I notice it varies considerably.

Mr. LINEWEAVER. Yes, sir. It depends upon the quality of the land in contiguous areas. Class 1 is the best land, and that is determined by the soil conditions and the amount of leveling required and the drainage characteristics of the soil. Class 2 land has less productive qualities and other conditions; probably the drainage and leveling are more complicated. Class 3 is a step or two below class 2. In figuring out what is an economical unit of those 3 classes, the soil is classified according to those 3 classes, and those classifications are reviewed and taken into consideration in the laying out of a farm unit.

That has been done in cooperation with the Arizona State College of Agriculture at Tucson and the Bureau of Plant Industry and the county agent of Yuma County. The Soil Conservation Service has cooperated to some extent in it but, because of lack of funds, has not been able to cooperate as fully as we would have liked for it to do.

Mr. BUDGE. One of the purposes, as I understood it, for the $800,000 to be transferred to the Department of Agriculture was to make a more precise determination of this particular item, was it not?

Mr. LINEWEAVER. Not exactly that, Mr. Budge. As you recall from Dean Clyde's statement yesterday, he explained that the purpose of that was more to advise the settlers who were already on the ground as to how they could get the best results from their water applications under the specific soil conditions that exist.

Mr. BUDGE. He also touched upon the feasibility of the project to quite an extent.

Mr. LINEWEAVER. Yes, sir.

Mr. KIRWAN. Mr. Lineweaver, you say the veterans are going to settle this project?

Mr. LINEWEAVER. Yes, sir.

Mr. KIRWAN. Do you mean Indians who are veterans or veterans of the armed services?

Mr. LINEWEAVER. So far as we are concerned, Mr. Kirwan, and so far as the regulations provide, there is no distinction between veterans of the armed services.

Mr. KIRWAN. I do not think there should be any distinction, but what I mean is this: Are we going to continue to bring the Indians north when we can put them on something like this? You will have a veteran who is living in the North who is already doing all right. Are we going to take him down to Arizona and put him on a project of this nature when the poor Indian that is down there in the desert we are not going to do a thing for? We are trying to take the Indian out of Arizona and stick him in Chicago, where he knows nothing about the situation; is that correct?

Mr. LINEWEAVER. I do not know, Mr. Kirwan, what the plans are with respect to the Indians?

Mr. KIRWAN. You are with the Reclamation Bureau and not with the Indian Bureau, but that is what they are doing with the Indian. They are moving others from one part of the country down in there and we are taking the Indian and trying to put him up in the other part of the country. I am not condemning you but I am condemning the Congress. They make some effort, and rightfully so and correctly so, to take care of the Indian. They allot a thousand dollars and then have to spend $600 to administer it. The only way we can assist the Indian, as I see it, is to put him on proper land where he can make a living, and there is no other way. The Indian, as a rule, has had no opportunity to go to school and it is difficult for him to make his way.

I again say that it is not the Reclamation Bureau that I am condemning in this matter but it is the Congress itself.

CONSTRUCTION AND REHABILITATION AND OPERATION AND MAINTENANCE

COLORADO RIVER FRONT WORK AND LEVEE SYSTEM PROJECT, ARIZONA-CALIFORNIA-NEVADA

Mr. JENSEN. The next project is the Colorado River front work and levee system project, which includes the States of Arizona, California, and Nevada.

The justifications indicate that the amount requested for construction for 1954 of $1,905,000 will complete this project. Is this actually the case or will there be further requests?

Mr. LINEWEAVER. Mr. Chairman, you recall yesterday in my presentation of the revisions made by Secretary McKay that the budget estimate for this year of $1,905,000 was reduced to $150,000, making a net reduction of $1,755,000.

The reason for that reduction was the inability of the Bureau to negotiate with the landowners to provide rights-of-way for the levee system in the Yuma area. As I stated in response to questions yesterday, while the law might permit the Secretary to buy the rights-of-way, we would not be able to go into it sufficiently to change the original recommendation that the rights-of-way should be furnished by the landowners on some work in that area. I would like to submit a statement which shows the restricted program for 1954, leaving $150,000 in the appropriation for the purchase of equipment and other necessary work.

Mr. JENSEN. We will be glad to have it.

(The matter referred to follows.)

COLORADO FRONT WORK AND LEVEE SYSTEM, ARIZONA, CALIFORNIA, NEVADA—RESTRICTED PROGRAM—FISCAL YEAR 1954

The fiscal year 1954 budget estimate now before this committee contains an appropriation request for $1,905,000 for the continuation of the Colorado front work and levee system in the vicinity of Yuma, Ariz.

It is proposed that this appropriation item be reduced by $1,755,000 and that funds in the amount of $150,000 be provided for the maintenance of the portions of the levee system which will have been constructed by the close of fiscal year 1953. The amount of $150,000 will be used for the purchase of such maintenance facilities as quarrying, rock and earth moving, and road-maintenance equipment, and the operation of this equipment.

The reduction in the budget estimate is recommended in view of the lack of interest and failure to provide necessary rights-of-way by the landowners in the north and south Gila Valleys for construction of the portions of the levee system lying along the Gila River between the Gila siphon of the Gila gravity main canal and the Gila River. Though the Bureau of Reclamation has repeatedly attempted over the past 2 years to advise the landowners of the purposes and benefits of the project, and to encourage them to assist in the work by furnishing rights-of-way, such attempts have resulted only in repeated failure to obtain affirmative support for the project by the people of the area. In fact we are led to the conclusion that continuation of the work would result in active opposition by the landowners and place the Bureau in position of forcing an unwanted project on the people.

While the basic legislation covering the flood-control work is permissive rather than mandatory in that it does not prohibit the purchase of rights-of-way by the United States, if such action can be justified, it has been the Bureau's consistent position that the Gila flood portion of the system could be built only if the landowners would relieve the Government of spending an estimated $1,200,000 for rights-of-way which would result in a very high construction cost for the protection of a relatively small area (gross acreage, 26,000). In the face of the present attitude of the landowners, acquisition of rights-of-way in the North and South Gila Valleys which could be obtained only through condemnation proceedings, would place the Bureau in ill repute in the Yuma area.

The construction of the levee system was undertaken to protect agricultural lands bordering the lower Colorado and Gila Rivers from floods on either or both of these streams. By the end of fiscal year 1953 the levees along the Colorado River between the Laguna Dam and the international boundary will have been constructed, leaving only the north and south Gila levees and the Gila floodway channel, to complete the system.

The Republic of Mexico was obligated, under the Treaty of 1949, to protect the United States from the increased flood stage on the Colorado and Gila Rivers caused by the construction of the Morelos Dam on the Colorado River just below the California boundary. Accordingly, the Mexican Government has deposited a sum of $2 million in a United States bank to the account of the United States Section of the International Boundary and Water Commission to cover its share of the levee construction cost. Funds from this account have been advanced by the International Boundary and Water Commission to defray Mexico's obligation in the completed work. An allotment of $395,000 from this fund was scheduled in fiscal year 1954 for use in construction of the Gila levees and floodway. Under the proposal to defer this portion of the program the scheduled allotment will be suspended.

Mr. JENSEN. The sum of $150,000 is all you are asking for?

Mr. LINEWEAVER. $150,000 on construction is all that is left out of $1,905,000 budget estimate.

Mr. JENSEN. We will put in at this point pages 6, 7, and 8 of the special data sheets furnished to the committee by the Bureau of Reclamation, and pages 305 through 309 and 91 through 95 of the justification.

(The matter referred to follows.)

CONSTRUCTION AND O. & M.

COLORADO RIVER FRONT WORK AND LEVEE SYSTEM PROJECT
ARIZONA-CALIFORNIA-NEVADA

Construction

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$8,546,678	$1,342,422	$2,300,000
Unliquidated obligations	111,600	−111,600	
Total obligations	8,658,278	1,230,822	2,300,000

Operations and Maintenance

	Actual 1952	Estimated 1953	Estimated 1954
Expenditures	$1,112,525	$1,083,450	$1,425,000
Unliquidated obligations	7,873		
Total obligations	1,120,398	1,083,450	1,425,000
Appropriation or estimate	1,120,398	1,083,450	1,425,000

HISTORY OF PROJECT DEVELOPMENT

Location.—Lower Colorado River from Lee Ferry, Ariz., to the Mexican border.

Purpose.—To control the lower Colorado River.

Authorization.—Acts of January 21, 1927 (44 Stat. 1010, 1021) and July 1, 1940 (54 Stat. 708).

Reauthorization.—Acts of June 28, 1946 (60 Stat. 338) and August 14, 1946 (60 Stat. 1080, Public Law 732, 79th Cong., 2d sess.).

Initial date.—

Planning, 1925
Advanced planning, 1933
Construction, 1933
Date of functional completion of construction, fiscal year 1954
Fiscal year and amount of initial allotment of appropriations for construction ..... fiscal year 1926, $50,000

COSTS

Original estimated cost	$6,300,000
Allocation of cost, nonreimbursable, river control	6,300,000
Present estimated cost	12,189,100
Allocation of cost, nonreimbursable, river control	12,189,100

REPAYMENT

Funds appropriated for the Colorado River front work and levee system are nonreimbursable. Expenditures for work performed on the Yuma levee system will be made from regular appropriations as augmented by transfers from the United States section of the International Boundary and Water Commission. The Mexican Water Treaty of 1944 provides that the cost of construction, operation, and maintenance of levees, interior drainage facilities, and other works, or improvements to existing works necessary to protect lands within the United States against damage from floods resulting from construction, operation, and maintenance of Morelos diversion dam, shall be borne by Mexico. The Bureau of Reclamation has agreed to construct the Boundary Commission's share of the flood-protective system simultaneously with a general strengthening program of the entire levee system near Yuma. Under the terms of the memorandum of understanding between the Boundary Commission and the Bureau of Reclamation, made January 12, 1951, Mexico's share was tentatively agreed to be $2,126,000, subject to revision upon completion of the work to correct any imprecisions in the estimates or to cover any unforeseen contingencies.

OPERATIONS

Personnel-number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Joint facilities:			
Actual June 30, 1952	155	18	
1953	218	5	
1954	222	5	
Denver office:			
Actual June 30, 1952			0.50
1953			.60
1954			.40
Regional CPA services:			
Actual June 30, 1952			5.0
1953			5.0
1954			4.0
Total:			
Actual June 30, 1952	155	18	5.5
1953	218	5	5.6
1954	222	5	4.4

CONSTRUCTION AND REHABILITATION

COLORADO RIVER FRONT WORK AND LEVEE SYSTEM, ARIZONA, CALIFORNIA, NEVADA

Summarized financial data

Estimated total obligations		$12,189,100
Total obligations to June 30, 1952		8,658,278
Allotment, fiscal year 1953	$687,948	
Contributions	131,000	
Prior year balance available	411,874	
Total obligations, fiscal year 1953		1,230,822
Allotment, fiscal year 1954	$1,905,000	
Contributions	395,000	
Total obligations, fiscal year 1954		2,300,000

JUSTIFICATION OF ESTIMATE

Authorization

The work involved was authorized by the acts of January 21, 1927 (44 Stat. 1010, 1021) and of July 1, 1940 (54 Stat. 708). The act of June 28, 1946 (60 Stat. 338), amended previous acts and authorized annual appropriation out of any moneys in the Treasury of the United States not otherwise appropriated to defray the cost of (*a*) operating and maintaining the Colorado River front work and levee system in Arizona, California, and Nevada; (*b*) constructing, improving, extending, operating, and maintaining the protection and drainage works and systems along the Colorado River; (*c*) controlling said river and improving, modifying, straightening, and rectifying the channel thereof; and (*d*) conducting investigations and studies in connection therewith. The remedial measures to preserve the wildlife refuge were authorized by the act of August 14, 1946 (60 Stat. 1080, Public Law 732, 79th Cong., 2d sess.).

Location

Activities of the Colorado River front work and levee system conducted under existing authority extend along the Lower Colorado Basin from Lee Ferry to the Mexican border, a river distance of 700 miles. Above Lake Mead, the river flows through Arizona, while through the major portion of Lake Mead and below Hoover Dam, the lakes and river form the dividing line between Arizona on the

east and Nevada and California on the west. The emergency remedial work on the wildlife refuge is located at the upper end of the Havasu Lake created by Parker Dam.

Description

The primary purpose of the Colorado River front work and levee system is set forth in the above paragraph under "Authorization." The construction program includes: (*a*) Flood protection system—Yuma, a rehabilitation program of existing levees and construction of new levees along the Colorado River in the vicinity of Yuma, Ariz., and construction of levees and a floodway channel along the Gila River; (*b*) investigations, Palo Verde diversion protection, near Blythe, Calif., for determination of a permanent solution to the problem of diversion for this district; and (*c*) Havasu Lake fish and wildlife protective work.

Dredging of the new channel for the Colorado River through the Topock unit of the wildlife refuge will confine the river flow to the west side of the valley and cut off the water now supplying the waterfowl area. The drainage of this swamp area at times of low river flow will destroy its value as a wildlife refuge, and remedial action is necessary. The work proposed at this time is of a temporary nature to meet the emergency, and plans will be developed by the Fish and Wildlife Service for the permanent works after further study and investigations.

Funds appropriated for the Colorado River front work and levee system are nonreimbursable. Expenditures for work performed on the Yuma levee system will be made from regular appropriations as augmented by transfers from the United States section of the International Boundary and Water Commission. The Mexican Water Treaty of 1944 provides that the cost of construction, operation, and maintenance of levees, interior drainage facilities and other works, or improvements to existing works necessary to protect lands within the United States against damage from floods resulting from construction, operation, and maintenance of Morelos diversion dam, shall be borne by Mexico. The Bureau of Reclamation has agreed to construct the Boundary Commission's share of the flood protective system simultaneously with a general-strengthening program of the entire levee system near Yuma. Under the terms of the memorandum of understanding between the Boundary Commission and the Bureau of Reclamation, made January 12, 1951, Mexico's share was tentatively agreed to be $2,126,000, subject to revision upon completion of the work to correct any imprecisions in the estimates or to cover any unforeseen contingencies. Out of this total the sum of $2 million has been deposited by Mexico with the United States section of the International Boundary and Water Commission. The United States section has agreed to advance monthly, to a trust or working fund to be established by the Bureau of Reclamation, the estimated value of the work to be performed for the United States section during the succeeding months. As a revised value of the work performed for the United States section each month becomes known after the end of the month, the Colorado River front work and levee system appropriation will be reimbursed for transfer from the trust or working fund. A final evaluation of the Boundary Commission's share will be made at the completion of each major group of units of the work.

Status

Contract work was initiated for raising Yuma levee and construction of Reservation levee in July 1951 and February 1952, respectively. Both of these jobs are scheduled for completion in the first quarter of fiscal year 1953. Imperial levee will be constructed during the third quarter of fiscal year 1953. Construction of North and South Gila levees and Gila floodway channel is entirely dependent upon obtaining a commitment on right-of-way before field data are secured and specifications are prepared. Construction is scheduled to start in the fourth quarter of fiscal year 1953 and continue through the first three quarters of fiscal year 1954.

A permanent solution to the Palo Verde irrigation district diversion problem has been proposed for congressional action. Performance of the work scheduled for fiscal year 1953, including surveys and investigations, preconstruction work, and the preparation of specifications, will depend upon what action, if any, is taken on this proposed legislation.

Bids on specifications covering the Havasu Lake Fish and Wildlife protective work were opened on June 4, 1952. The regional director rejected all bids as excessive and the work is being performed by Government forces.

Work proposed, fiscal year 1954

The program provides for completion of the contract for construction of the north and south Gila floodway channel if right-of-way is secured and work started in fiscal year 1953. This work will complete the construction program for the flood protective system, Yuma. Equipment required for maintaining the levees, including rock quarrying and road maintenance machinery will be acquired.

Justification

Prior to the construction of multiple purpose dams on the lower Colorado River, levees had been constructed in the vicinity of Yuma, Ariz., and Needles, Calif., to protect agricultural and urban areas from recurring floods of the Colorado River. Flood hazards were reduced by planned operation of these dams, but river regimen was altered, and river retrogression and aggradation have occurred in different localities, introducing new drainage, flood control, and diversion problems. The work program includes the alleviation of current river control problems and the prevention of future emergencies.

The total estimated cost for the system has been increased from $6,057,000 to $12,189,100. This adjustment results from some refinement of estimated amounts and the addition of the flood control plant item in the amount of $6,589,500 representing the cost of previously completed work.

Schedule of construction program, fiscal years 1952 and 1953

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Flood protective system, Yuma	$5,414,600	$1,905,800	$1,008,022	$2,500,778	
Havasu Lake Fish and Wildlife protective work	185,000	33,900	151,100		
Flood control plant	6,589,500	6,589,500			
Total cost	12,189,100	8,529,200	1,159,122	2,500,778	
Construction facilities		1,250		−1,250	
Stores		5,050	−5,050		
Project investigations		10,100	192,500	−202,600	
Transfers, credits, and other expenditures		1,078	−4,150	3,072	
Total expenditures	12,189,100	8,546,678	1,342,422	2,300,000	
Unliquidated obligations		111,600	−111,600		
Total obligations	12,189,100	8,658,278	1,230,822	2,300,000	
Method of financing:					
Allotment, fiscal year 1953			687,948		
Contributions			131,000	395,000	
Prior year balance available			411,874		
Allotments required				1,905,000	

OPERATION AND MAINTENANCE

Colorado River Front Work and Levee System, Arizona-California-Nevada

Summarized financial data

Total, fiscal year 1952	$1,120,398
Allotment, fiscal year 1953	1,083,450
Total obligations, 1953	1,083,450
Allotment, fiscal year 1954	1,425,000
Total obligations, 1954	1,425,000

JUSTIFICATION OF ESTIMATE

Location

The project extends along the Lower Colorado River from Lee Ferry to the Mexican Boundary, a river distance of 700 miles. Above Lake Mead the river flows through Arizona. Through the major portion of Lake Mead, all of Lake Mohave, and below Davis Dam, the lakes and river form the dividing line between Arizona on the east and Nevada and California on the west. Below Davis Dam, except for Havasu Lake, the river traverses alluvial plains and several irrigation projects and small communities are located along it.

General conditions

The act of June 28, 1946, Public Law 469, amended previous acts and authorized annual appropriations out of any moneys in the Treasury of the United States not otherwise appropriated to defray the cost of (*a*) operating and maintaining the Colorado River front work and levee system in Arizona, California, and Nevada; (*b*) constructing, improving, extending, operating, and maintaining the protection and drainage works and systems along the Colorado River; (*c*) controlling said river and improving, modifying, straightening, and rectifying the channel thereof; and (*d*) conducting investigations and studies in connection therewith.

Prior to the construction of multiple-purpose dams on the lower Colorado River, levees had been constructed in the vicinity of Yuma, Ariz., and Needles, Calif., to protect agricultural and urban areas from recurring floods of the Colorado River. Flood hazards were reduced by planned operation of these dams, but river regimen was altered, and river retrogression and aggradation have occurred in different localities, introducing new drainage, flood control, and diversion problems. The work program includes the alleviation of current and anticipated river problems, the maintenance of river control installations, and the recording of river behavior. In reaches of the river where aggradation has caused flooding of agricultural lands and the endangering of communities and transportation, it is planned to lower the water surface by improving, modifying, straightening, and rectifying the channel by dredging a new channel using the Government-owned dredge *Colorado*. At the intake of the Palo Verde Irrigation District where retrogression has occurred, a temporary rock weir was built to raise the water surface so gravity flow is possible. Maintenance of this temporary rock weir is planned until such time as a definite solution of the problem can be accomplished.

Work proposed, 1954

	Program, 1954	Increase+ or decrease− from 1953
OPERATIONS		
River surveys and investigations	$108,819	+$5,971
For the continuation of studies of river problems, including routine aggradation and retrogression surveys, Davis Dam to boundary; river-bottom investigations in connection with land-use ownership; routine streamflow and irrigation studies; routine sedimentation and salinity studies; special surveys as required; land-use survey of federally owned lands along the lower Colorado River; surveys by Fish and Wildlife Service; wind and evaporation-loss studies on Lake Mead, a cooperative survey with the U. S. Navy, Weather Bureau, and Geological Surevy; administration of federally owned river-botton lands; preparation and publication of the Annual Report for the Office of River Control; and for supplies and expenses necessary to the above. Increase is due to increase in cost of supplies.		
MAINTENANCE		
Structures and improvements	153,381	+107,100
Maintenance of the Needles levee system completed in 1946 and the Needles to Topock Channel levee completed under the channelization program, Needles operating yard, Needles housing, Yuma levee system which includes the reconstructed levees, Palo Verde temporary weir, and emergency work as required. Increase is due to estimated maintenance requirements of the increase in length of levees (Yuma levees and channel levees, Needles to Topock).		
Dams and waterways	981,436	+167,241
Maintenance of Cibola pilot channel, completed channel and channel alinement Needles to Topock, prosecution of channelization Davis Dam to Needles, and emergency channelization as required. Increase is due to scheduling operation of dredge *The Colorado* on full-time basis and requirement to preserve channel capacity and to protect bank alinement.		
Replacements and improvements	181,364	+61,238
Acquisition of a steel hull for an 8-inch sand pump; remodel the floating pipeline elbow barge of dredge *The Colorado* for improved operations; replacement of 6 passenger-carrying vehicles, 2 station wagons, 1 pickup truck, 1 heavy-duty truck, 2 workboats, and miscellaneous small equipment; replacement and upkeep of dredge plant and its mechanical equipment to replace wornout items in an orderly manner; acquisition of miscellaneous equipment and for major-overhaul work equipment. Increase is due to requirement to replace worn equipment, improve operation of equipment, and to maintain equipment for economical and orderly prosecution of project features		
Total obligations, all facilities	1,425,000	+341,550

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
Operations:			
River surveys and investigations	$114,707	$102,848	$108,819
Operation Imperial Dam and related work	2,415		
Maintenance:			
Structures and improvements	96,047	46,281	153,381
Dams and waterways	541,964	814,195	981,436
Pumping and other equipment	1,177		
Replacements and improvements	364,088	120,126	181,364
Total obligations	1,120,398	1,083,450	1,425,000
Method of financing:			
Allotment	1,073,000	1,083,450	
Unobligated balance	−2,602		
Allotment required			1,425,000
Funds advanced by water users	50,000		

PALO VERDE DIVERSION PROTECTION PROJECT

Mr. JENSEN. About the Palo Verde diversion protection project, where work is being held up pending legislative action, the ultimate effect of the work scheduled to be performed is to benefit a number of towns in the area, is it not?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. Why should not these beneficiaries stand some of the maintenance cost, at least?

Mr. LINEWEAVER. Mr. Chairman, that is a long story, revolving about the control of the Colorado River resulting from the operation of Boulder Dam and subsidiary structures downstream. There is now pending in the Congress a bill which would provide for a solution of this problem, and within a short time we expect to have a conference with the Palo Verde people and others in the area, including representatives of the Colorado River Indian reservation which is across the river from the Palo Verde area, and try to reach an agreement for a permanent solution of the Palo Verde problem.

Pending that solution, the Congress for the last year or two has been providing funds for the maintenance of a temporary weir which aids in the diversion of water from the Colorado River to the Palo Verde main canal. That is an unsatisfactory operation from the standpoint of the Bureau, as well as from the standpoint of the Palo Verde district, and we are hoping that some agreement may be reached so that we can come to Congress with more or less of a united front in the form of legislation that will bring about a settlement of this problem.

LEGISLATIVE HISTORY

I have a general statement on operation and maintenance and also on the legislative history of the Colorado River operations.

Mr. JENSEN. Without objection, they may be included in the record.

(The statements follow:)

COLORADO RIVER FRONT WORK AND LEVEE SYSTEM—OPERATION AND MAINTENANCE

LEGISLATIVE HISTORY

Act of March 3, 1925 (43 Stat. 1186), in paragraph 16 thereof authorized appropriation of not to exceed $650,000 to reimburse the reclamation fund, for

the benefit of the Yuma Federal irrigation project, for all prior costs incurred and paid from the reclamation fund for the operation and maintenance of the Colorado River front work and levee system adjacent to the Yuma project. It authorized appropriation for fiscal year 1926 of the sum of $50,000 for the purpose of paying the operation and maintenance cost of the Yuma levee system during that fiscal year and further authorized the appropriation of the sum of $35,000 for the fiscal year 1927 and annually thereafter.

The provisions of act of March 3, 1925, were amended by act of January 21, 1927 (44 Stat. 1010), by increasing the authorized annual appropriation from $35,000, as provided by the prior act, to $100,000.

Act of July 1, 1940 (54 Stat. 708), amended the act of January 21, 1927, by extending the authority to include the cost of other necessary protection works and systems along the Colorado River between the Yuma project and Hoover (Boulder) Dam. The maximum annual appropriation of $100,000 was not changed.

The act of July 1, 1940, was finally amended by act of June 28, 1946, thereby establishing the authority under which regulation and protective works are now being executed on the Colorado River. The provisions of the latter act are quoted in full for ready reference.

"That for the purpose of controlling the floods, improving navigation, and regulating the flow of the Colorado River, there is hereby authorized to be appropriated, out of any moneys in the Treasury of the United States not otherwise appropriated, for the fiscal year ending June 30, 1928, and annually thereafter, such sums as may be necessary, to be spent by the Bureau of Reclamation under the direction of the Secretary of the Interior, to defray the cost of (a) operating and maintaining the Colorado River front work and levee system in Arizona, Nevada, and California; (b) constructing, improving, extending, operating, and maintaining protection and drainage works and systems along the Colorado River; (c) controlling said river, and improving, modifying, straightening, and rectifying the channel thereof; and (d) conducting investigations and studies in connection therewith: *Provided*, That the expenditure of moneys for any of the foregoing purposes shall not be deemed a recognition of any obligation or liability whatsoever on the part of the United States: *Provided further*, That, within the discretion of the Secretary of the Interior, local communities to be benefited by works constructed pursuant to this Act may be required to provide, without cost to the United States, necessary rights-of-way and maintenance of the completed works and assurance, satisfactory to him, of payment of valid claims arising out of damage caused to persons or property by reason of the construction, operation, or maintenance of any such works: *Provided further*, That any moneys received by the United States as reimbursement in accordance with contracts heretofore entered into under the authority of the Act of December 21, 1928 (45 Stat. 1057), as amended, and ratified by the Act of August 30, 1935 (49 Stat. 1028, 1039), for expenditures made under the authority of this paragraph, shall be covered into the Treasury as miscellaneous receipts. In connection with operations conducted under this paragraph, the Secretary of the Interior shall have the same authority with respect to (a) the acquisition, exchange and disposition of lands, interests in lands, water rights and other property, and the relocation thereof; (b) the utilization of lands owned or acquired by the United States; (c) construction and supply contracts; (d) the performance of necessary or proper acts; and (e) the making of necessary or proper rules and regulations, which he has in connection with projects under the Federal reclamation laws, Act of June 17, 1902 (32 Stat. 388), and Acts amendatory thereof or supplementary thereto. Nothing contained in this paragraph shall be deemed to amend, repeal, or otherwise affect the provisions contained in the First Deficiency Appropriation Act, 1944, under the caption 'Department of the Interior, Bureau of Reclamation—Colorado River front work and levee system' (58 Stat. 150, 157)."

CURRENT ACTIVITIES

Operation and maintenance

The amendment of June 28, 1946, to the Colorado River front work and levee system authorization acts previously approved, was made necessary because the development of serious difficulties at several points along the river. These difficulties, after careful investigations, were found to be brought about by the construction by the Government of dams along the lower Colorado River, such as Hoover Dam, Parker Dam, and Imperial Dam, which have interfered

with the natural regimen of the river. The results of the interference were felt at Needles, Calif., where a stretch of river, some 12 to 15 miles long, between Needles and Topock, Ariz., had deteriorated and turned into a swamp, with resultant higher water levels at Needles and along the right-of-way of the Santa Fe Railroad, making necessary the evacuation of private properties at Needles and substantial remedial works to the main-line tracts of the railroad. Other difficulties had arisen near Blythe, Calif., where the riverbed had degraded to such an extent that the Palo Verde Irrigation District was no longer able to maintain its diversions from the river. A situation similar to the one at Needles was in its early stages at the lower end of Cibola Valley in Arizona, some 30 miles below Ehrenberg, where increased water levels were interfering with the established drainage system from the Palo Verde Valley.

Preliminary work to remedy the damage being done by the changed regimen of the river was started in 1944, with emergency appropriations to acquire seeped land at Needles and make temporary improvements to the protective levee there; and to construct a temporary weir at the intake for the main canal serving the Palo Verde Irrigation District so as to maintain a water surface elevation in the river sufficient to permit diversion of the irrigation requirements of the valley. Subsequent to the passage of the amended authorization act, temporary relief was afforded at the outlet of the drainage system from the Palo Verde Valley by the construction of a pilot cut which changed the course of the river near the drainage outlet and produced improved conditions in the valley in the form of lower water surface elevations at the drainage outlet.

The main efforts to remedy the deterioration of the bed of the Colorado River has been concentrated in the Needles area, with the acquisition by the Bureau of Reclamation of a modern sectional 20-inch suction dredge which has been employed in the river in the Needles area since February 1949. The acquisition of the dredge by the Government and its operation by Government forces were decided upon only after exhaustive investigations had disclosed that no suitable dredge was available on the Pacific coast for the work, and that it would be in the best interest of the Government to prosecute the work by Government forces rather than by contract. Before the final decision in that respect was made, extensive hearings were held at which representatives of the dredging industry on the Pacific coast were heard; and the matter was considered by several advisory boards, consisting of private consulting engineers expert in river dredging matters.

The first phase of the Needles to Topock rectification program was completed on June 25, 1951, when the plugs were removed, permitting the river to enter into the new channel. This first phase consisted of the excavation by the dredge of approximately 9 million cubic yards of material from the densely overgrown swamp and depositing it in a levee paralleling the dredge cut and protecting the low areas along the new river channel from inundations at times of ordinary floods. The total cost of the dredging operation from the time the dredge was placed in operation until the time the river channel was opened was $900,804.76: $657,400.90 for excavation, $243,287.86 for disposal of the excavated materials, and $77,192.98 for shaping and surfacing the levee. The unit costs for this work are as follows:

	Per cubic yard
Excavation by dredging	$0.074
Disposal	.028

or a total for excavation and disposal of $0.102 per cubic yard. This cost includes direct and indirect costs, overhead, depreciation of equipment, engineering, warehousing, etc., and is believed to compare favorably with the cost of similar work executed by contract. In the course of the dredging operations between Needles and Topock, the dredge foundered and became partly submerged. It was speedily raised and placed back in operation. The cost of raising the dredge, including the cost of bringing it back to the Needles yard and rehabilitation and safety improvements, has been added to the capital cost of the equipment and is being amortized in the same manner as the original cost.

After the opening of the new river channel, dredging was suspended for 3 weeks to permit the river to partly adjust itself to the new conditions, and to permit the regular yearly overhaul of the dredge equipment. Thereafter dredging was continued upstream so as to improve the transition from the old to the new riverbed.

It had been the intention, after the completion of the Needles to Topock dredge cut, to move the dredge overland to Cibola Valley and there, as the second phase of the river stabilization program, to excavate a new river channel to provide permanent relief for the drainage conditions in the Palo Verde Valley and prevent the formation of an extensive swamp similar to the one in the Needles area. As an incidental benefit, large areas of agricultural land in Cibola Valley would be made safe against ordinary floods from the river. Part of the contemplated program consisted of the removal of the previously constructed temporary weir at the intake to the main canal of the Palo Verde Valley, because the construction of the new river channel would make future maintenance of the weir prohibitive. The removal of the temporary weir would necessitate the construction of permanent means of diverting water to the Palo Verde Valley, either in the form of a pumping plant or in the form of a canal along the east side of the river for about 40 miles, from Headgate Rock Dam of the Bureau of Indian Affairs. Negotiations with the Palo Verde Irrigation District for an agreement covering the construction of the permanent diversion features have not yet been concluded and for that reason it was decided to amend the program for the river regulation work and, instead of doing the Cibola Valley cut as the second phase, to improve the river channel upstream from Needles toward Davis Dam. The benefits deriving from this work would be that it would make possible the agricultural development of a very large area in the Mohave Valley in Arizona, and a smaller area in Nevada, and would increase the head at the power plant at Davis Dam. The dredge is presently engaged in regulating the river channel upstream from Needles, and constructing a levee between the river channel and the agricultural land to the east in Arizona. Until August 31, 1952, a total volume of 13,316,660 cubic yards has been excavated from the riverbed and deposited in adjacent levees. The total cost thereof has been $1,133,544.40 for excavation, and $399,934.33 for disposal, or $0.085 per cubic yard for excavation, and $0.030 per cubic yard for disposal, with a total for excavation and disposal of $0.115 per cubic yard. The slight increase in unit cost as compared with the Needles to Topock dredging is due to several increases in wages for dredge personnel and increased cost of fuel and other supplies.

During the calendar year 1952 it became necessary to drydock the dredge for the purpose of painting the underwater surfaces of the hull, which had not been repainted since the dredge was first placed in operation. Since no drydocks are available on the Colorado River, and since a dismantling of the dredge for the purpose of repainting would have been prohibitive in cost, a novel method for drydocking the dredge was employed by letting the dredge excavate its own dock chamber, which was then unwatered by means of wellpoints. All work involved in the drydocking and painting program was done by the regular dredge crew. Total cost of construction of drydock and refinishing dredge was $56,000, including all charges.

During the year it also became desirable to provide access from the main yard of the project to the east bank of the new river channel, so as to permit the hauling of rock and gravel for the protection of the newly established river banks. A trestle bridge, which has a length of 400 feet between abutments, was constructed by utilizing surplus steel girders made available without cost by the Department of the Army. Total cost, including right-of-way, extensive rock protection around abutments and piers, and all indirect costs, was $116,000.

The bridge is single-tracked and is intended for the sole use of the Government for maintenance purposes. As a result of the dredging operations, however, the water surface elevation at Needles has been lowered some 5 to 6 feet compared with that prevailing before the dredging was done. Extensive areas across the river from Needles have been drained sufficiently to permit agricultural development on a large scale. It has not yet been possible for local authorities in Arizona to provide access roads to this entire area; neither has any progress been made to date in the construction of a public highway bridge across the river at Needles. For that reason many requests are being received by the Bureau of Reclamation for permission to use the Government bridge. It has been felt that some of the ranchers in the Mohave Valley would be faced with serious hardships should they be forced to travel over almost nonexistent trails in order to obtain needed supplies and equipment from settlements and towns on the Arizona side. For that reason, temporary permissions have been given to farmers in the lower part of the valley, who have practically no other access to their properties, to make limited use of the Government bridge for the purpose of securing needed supplies at Needles. Permission has been denied, however, commercial firms to utilize the bridge for the purpose of delivering supplies to the ranchers in the

valley. Interested parties in both Arizona and California are being constantly urged to provide other means of communication for the use of the public.

Another major phase of the operation and maintenance activities has been the repeated requirements for repair and strengthening of the temporary weir at the intake for the Palo Verde Irrigation District. The weir was constructed in 1944 as a temporary means of preventing further retrogression in the river bed at the intake, thus making it possible for the Palo Verde Irrigation District to continue diversions during the critical war years. The original appropriation for the construction of the weir was $250,000 (First Deficiency Appropriation Act, 1944, approved April 1, 1944). The intention was that, by the end of the war, means would be sought to provide a permanent solution to the diversion problem. Negotiations to that effect have been carried on since 1945, with the result that the several possibilities for establishing a permanent water supply have been reduced to two alternatives: Either the construction of a pumping plant, which is the solution favored by the Bureau of Reclamation because of its lesser cost to the Government; or the construction of a canal from Headgate Rock Dam through the Colorado River Indian Reservation and a siphon under the river. The latter solution is favored by some interests in the valley but by no means by all. The cost to the Government is substantially greater for the canal scheme than the pumping scheme.

While these considerations have been proceeding, the Bureau of Reclamation has been faced with the necessity of maintaining the temporary weir beyond the period for which it was intended to be used, and the Congress, in the annual appropriations for the Colorado River front work and levee system, has extended to the Bureau the necessary authorization to do so. In the month of January 1952, a major subsidence took place in the weir, requiring immediate and extensive repairs. These repairs were undertaken with Government forces. The cost of the repair work was met in the amount of $25,000 appropriated funds, and an additional $49,292.21 furnished as a trust fund by the Palo Verde Irrigation District. A total of 26,000 cubic yards of rock was placed in the weir. This compares with the approximate total of 40,000 cubic yards of rock placed when the weir was first constructed. In November 1952, minor repairs were necessary which were executed at Government expense from 1953 appropriations. The approximate cost of these repairs was $10,000. To date the total cost of the weir and headworks, construction and maintenance, has been $562,900, of which the Government has furnished $460,100, and the Palo Verde Irrigation District $102,800. An approximate total of 190,000 cubic yards of rock has been placed in the weir. The office of river control, which administers the Colorado River front work and levee system project, has repeatedly emphasized to the district the danger to the valley of relying on the unsafe temporary weir for diversions.

The main object of the operation and maintenance activities along the river is to protect lands adjacent to the river from overflow at times of high releases. This is accomplished by the rectification of the river channel and the construction of levees such as those in the Needles area. Another object is to prevent erosion of land along the river's edges by bank protection and by eliminating as far as practicable the meandering of the stream. This program will extend over 10 years or more, depending on the appropriations made available and, in the meantime, it is inevitable that in some places along the river, land, including private land, will be eroded in places not yet covered by the rectification work. Were the funds appropriated for river maintenance to be expended to a large extent to protect private lands along the river, pending the completion of rectification work, the main work along the river, aiming at overall protection, would be seriously curtailed. For that reason, it has been the policy of the Bureau of Reclamation to undertake local protection work in the case of minor damage to individual ownerships only where the damage assumes near-emergency proportions and is so severe that the situation cannot be coped with by local means.

The act of June 28, 1946, provides authority for continuing investigations and studies in connection with the main functions of the project. These investigations have consisted of continuous observations of the river's behavior and periodic reports thereon. They have also included extensive surveys of river-bottom lands in cooperation with the Geological Survey so as to determine what lands should remain withdrawn from entry so as to be available for river work, and which could be released for agricultural and recreational purposes. Investigations have been made on the rate of sedimentation in Lake Mead by a joint effort of various bureaus of the Department of the Navy, the Coast and Geodetic Survey of the Department of Commerce, and the Geological Survey and

the Bureau of Reclamation of the Department of the Interior. A report on these activities will be issued in the spring of 1953. Currently there is in progress on Lake Mead a more exact investigation of the amount of water which is lost from the lake because of evaporation than has ever been attempted in the past. This investigation is being undertaken in cooperation with the Department of the Navy, the Weather Bureau of the Department of Commerce, and the Geological Survey.

One additional operation and maintenance activity was added to the responsibilities of the office of river control during the calendar year 1952, in that a special appropriation was made from reclamation funds to provide for supervision of operations by the Imperial Irrigation District of the Imperial Dam and All-American Canal, transferred to the district on May 1, 1952, in compliance with the provisions of the contract of December 1, 1932, and the amendatory contract of March 4, 1952. A special position was created of supervisor, Imperial Dam, who reports to the regional director, region 3, through the office of river control in Boulder City.

Mr. LINEWEAVER. I also have a specific statement on the operation and maintenance item for fiscal year 1954:

(The matter referred to follows:)

OPERATION AND MAINTENANCE, COLORADO RIVER FRONT WORK AND LEVEE SYSTEM, ARIZONA-CALIFORNIA-NEVADA

The project extends along the lower Colorado River from Lee Ferry to the Mexican boundary, a river distance of 700 miles. Above Lawe Mead the river flows through Arizona. Though the major portion of Lake Mead, all of Lake Mohave, and below Davis Dam, the lakes and river form the dividing line between Arizona on the east and Nevada and California on the west.

The act of June 28, 1946, Public Law 469, amended previous acts and authorized annual appropriations out of any moneys in the Treasury of the United States not otherwise appropriated to defray the cost of (*a*) operating and maintaining the Colorado River front work and levee system in Arizona, California, and Nevada; (*b*) constructing, improving, extending, operating, and maintaining the protection and drainage works and systems along the Colorado River; (*c*) controlling said river and improving, modifying, straightening, and rectifying the channel thereof; and (*d*) conducting investigations and studies in connection therewith.

Prior to the construction of multiple-purpose dams on the lower Colorado River, levees had been constructed in the vicinity of Yuma, Arizona, and Needles, California, to protect agricultural and urban areas from recurring floods of the Colorado River. Flood hazards were reduced by planned operation of these dams, but river regimen was altered, and river retrogression and aggradation have occurred in different localities, introducing new drainage, flood control, and diversion problems.

An appropriation of $1,425,000 will be required for accomplishment of the fiscal year 1954 work program, which is explained in detail in our printed justification. It includes the alleviation of current and anticipated river problems, the maintenance of river control installations, and the recording of river behavior. In reaches of the river where aggradation has caused flooding of agricultural lands and the endangering of communities and transportation, it is planned to lower the water surface by improving, modifying, straightening, and rectifying the channel by dredging a new channel using the Government-owned dredge *The Colorado*. At the intake of the Palo Verde Irrigation District where retrogression has occurred, a temporary rock weir was built to raise the water surface so gravity flow is possible. Maintenance of this temporary rock weir is planned until such time as a permanent solution of the problem can be accomplished.

Mr. BUDGE. How much of the total cost of this project will be reimbursable?

Mr. LINEWEAVER. Under the law of 1946 it is nonreimbursable, on the same order that the costs of levee systems and related work on other streams, where the work is done by the Corps of Engineers, are nonreimbursable.

Mr. BUDGE. That is what I was getting at. On its face this is an entirely nonreimbursable project, except for some contribution to be made by Mexico, which has not yet been agreed upon. This would seem to be more a Corps of Engineers project than a Bureau of Reclamation project. Why does the Bureau have to be in this?

Mr. LINEWEAVER. That goes back before the Boulder Canyon Project Act of 1928. Congress authorized and reauthorized this work in the acts of March 3, 1925 (43 Stat. 1186) and January 21, 1927 (44 Stat. 1010). Hoover Dam was authorized by the act of December 21, 1928 (45 Stat. 1052). That act entrusted to the Secretary of the Interior the responsibility not only for the construction of Hoover Dam, but also for the regulation of the river down to the Mexican border.

The Boulder Canyon Project Act also authorized the Imperial Dam and the All-American Canal to serve the Imperial Valley in California and the Coachella Valley, also in California.

No further implementation of the Secretary's control of the Colorado River was given recognition by Congress until 1940 (act of July 1, 1940 (54 Stat. 708)), when this Colorado River front work and levee system bill was enacted. It was amended later by the act of June 28, 1946. You are correct in saying that this is an unusual situation, but it is brought about because of the Secretary's responsibility for the operation of the main structure in the river, Hoover Dam, which later was supplemented by the Parker Dam down below, and subsequently by Davis Dam, which is between Boulder Dam and Parker Dam, and Imperial Dam, for the diversion of water both to California and Arizona. The act of 1928 also puts a responsibility on the Secretary for contracts with the States of California, Arizona, and Nevada with respect to diversions from the Colorado River for each of the States in accordance with the Colorado River compact of 1922.

Mr. BUDGE. Those of us who are so interested in irrigation and reclamation, and by that token interested in the functions of the Bureau of Reclamation, are somewhat concerned about projects of this type. We like to pride ourselves on operating in the reclamation States on the basis of repayment to the Federal Government, and every time we get a project like this that is entirely nonreimbursable, it makes our total look bad in our presentation to the Congress.

Mr. LINEWEAVER. That is true, Mr. Budge, but the situation is, and I think Congress has recognized it, that Hoover Dam is a revenue producer, and that its operations for the production of power and the regulation of the stream are so intertwined that the effects on the stream banks and so forth are such that the Corps of Engineers, so far as I know, has acquiesced in this program. While the corps does have some responsibility for flood control of tributary streams on the Colorado like the Bill Williams River and the Gila, the question of jurisdiction over the years that have elapsed since 1928, to my knowledge, has never been challenged.

The Secretary, beginning back with Secretary Wilbur, I believe, in 1928, put this responsibility on the Bureau of Reclamation because of its relationship to the irrigation in southern California and also the operation at Boulder Dam.

Mr. BUDGE. I am glad to have your explanation.

PERSONNEL

Mr. Chairman, was it your intention to inquire as to the 222 employees in connection with this project?

Mr. JENSEN. That is your privilege, Mr. Budge. I might say that I think the committee will work out a personnel program when the bill is marked up, at which time this matter of personnel will be adjusted in a manner that I believe will be right and proper and will bring the personnel down to a figure the first year which will be at least a beginning in the right direction, and hence I had not intended to spend much time on asking questions about personnel. However, where there is a project that appears to be excessively overloaded with personnel who have been employed on that project very recently, I think it is well that we ask some questions as to why that has happened.

I note they are asking for 7 more people in 1954 than they have in 1953. As you know, Mr. Budge, each year they keep crowding up, crowding up, crowding more people onto the payrolls, and it seems like a difficult thing to head off, but I believe we will be able to do that with the right kind of a program that will take effect in 1954.

Mr. LINEWEAVER. May I comment on this particular project that with the elimination of this $1,755,000 of construction, that that personnel figure will be reduced proportionately so far as the construction forces are concerned. I am not at this time able to tell you precisely what the reduction will be, but I can assure you that the construction forces will be reduced in accordance with the reduction in the amount of the appropriation.

Also, for the record, I would like to say that as of December 31 there were on the payroll 190 employees, both for construction and operation and maintenance.

Mr. MARKWELL. Mr. Chairman, I wish to point out that quite a number of those employees are engaged in dredging operations on the river as well as river-control work.

BOULDER CANYON PROJECT, HOOVER DAM AND POWERPLANT, ARIZONA-NEVADA

Mr. JENSEN. Turning to Boulder Canyon project, Hoover dam and powerplant, Arizona-Nevada, we will insert at this point in the record pages 9–12 of the special data requested from the Bureau of Reclamation and pages 311–314 of the justification.

We will also insert in the record pages 81–85 of the justification for operation and maintenance.

(The data referred to follows:)

CONSTRUCTION AND OPERATION AND MAINTENANCE

BOULDER CANYON PROJECT, HOOVER DAM AND POWERPLANT, ARIZONA-NEVADA

Construction

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$157, 875, 101	$951, 579	$373, 000
Unliquidated obligations	600, 908	−600, 908	
Total obligations	158, 476, 009	[1] 350, 671	373, 000

[1] Does not include $40,000 of C. and R. funds allotted to Boulder Canyon project for improvement work at Boulder City but scheduled under "O. and M., Boulder City."

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$1, 497, 312	$1, 627, 619	$1, 654, 710
Unliquidated obligations	47, 738	−49, 922	
Total obligations	1, 545, 050	[1] 1, 577, 697	[2] 1, 654, 710
Unobligated balance	125, 950		
Less funds advanced by power allottee		−24, 697	
Appropriation or estimate	1, 671, 000	[3] 1, 553, 000	[3] 1, 654, 710

[1] Includes $114,300 for certain costs of furnishing power and water supplied by Boulder Canyon project to Boulder City.
[2] Includes $113,800 for certain costs of furnishing power and water supplied by Boulder Canyon project to Boulder City.
[3] Does not include funds for Boulder City project.

HISTORY OF PROJECT DEVELOPMENT

Location

Hoover dam and powerplant are located in the Black Canyon of the Colorado River on the Arizona-Nevada State boundary, 7 miles northeast of Boulder City, Nev.

Purpose

The primary purpose of the project is to regulate the flow of the Colorado River for control of floods, for irrigation and municipal water supplies, for improvement of navigation, and for generation of electrical energy.

Authorization

Boulder Canyon Project Act of December 21, 1928 (45 Stat. 1057).

Reauthorization

Boulder Canyon Project Adjustment Act of July 19, 1940 (54 Stat. 774).

Initial date

Planning: In 1902, shortly after passage of Reclamation Act, planning was begun for storage on the lower Colorado River.

Advanced planning, 1929: The Boulder Canyon Project Act was declared effective June 25, 1929.

Construction: 1931.

Date of functional completion of construction, fiscal year 1956.

Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1930, $10,660,000.

COSTS

Original estimated cost	$126,500,000
Allocation of cost:	
Power	101,500,000
Flood control	25,000,000
Present estimated cost	172,070,000
Allocation of cost:	
Power	147,070,000
Flood control	25,000,000

REPAYMENT

Amount to be repaid and repayment period:
Power, $147,070,000
Regular repayment period: 1937 to 2007
Total: Boulder Canyon Adjustment Act requires repayment of investment of power facilities with interest in a period of 50 years following installation.

OPERATIONS

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Power (kilowatts)	1,167,300	1,249,800	1,249,800	1,332,300
Average power rates (mills per killowatt-hour):				
Firm	2.007	2.171	2.171	2.171
Nonfirm	0.436	0.446	0.446	0.446

Personnel

Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954:

	Positions		Man-years
	Permanent	Temporary or seasonal	
Power:			
Actual, June 30, 1952	321	6	
1953	277	5	
1954	285	6	
Denver office:			
Actual, June 30, 1952			
1953			1.2
1954			.8
Regional CPA services:			
Actual, June 30, 1952			12.0
1953			7.0
1954			5.0
Total:			
Actual, June 30, 1952	321	6	12.0
1953	277	5	8.2
1954	285	6	5.8

CONSTRUCTION AND REHABILITATION

BOULDER CANYON PROJECT, HOOVER DAM AND POWERPLANT, ARIZONA-NEVADA

Summarized Financial Data

Estimated total obligations	$163,960,000
Total obligations to June 30, 1952	158,476,009
Prior year balance available	[1] 350,671
Total obligations, fiscal year 1953	350,671
Allotment, fiscal year 1954	373,000
Total obligations, fiscal year 1954	373,000
Balance to complete	4,760,320

[1] Does not include $40,000 of construction and rehabilitation funds allotted to the Boulder Canyon project for improvement work at Boulder City but scheduled under "Operation and maintenance, Boulder City, Nev."

JUSTIFICATION OF ESTIMATES

Authorization

Construction was authorized by the Boulder Canyon Project Act of December 21, 1928 (45 Stat. 1057), as revised by the Boulder Canyon Project Adjustment Act of July 19, 1940 (54 Stat. 774).

Location

Hoover Dam and powerplant are located in the Black Canyon of the Colorado River on the Arizona-Nevada States' boundary, 450 miles upstream from the Gulf of California, 260 miles downstream from the Bright Angel crossing of the Grand Canyon of the Colorado, and 7 miles northeast of Boulder City, Nev.

Description

The project consists principally of a dam and reservoir with appurtenant outlet works, spillways, a powerplant, and transmission and switching facilities for delivery of power to high voltage transmission lines of the power allottees originating near the powerplant. The primary purpose of the project is to regulate the flow of the Colorado River for control of floods, for irrigation and municipal water supplies, for improvement of navigation, and for generation of electrical energy. The Hoover powerplant is designed to have an installed capacity of 1,332,300 kilowatts.

Repayment

With the exception of $25,000,000 allocated to flood-control purposes by the enacting legislation, the costs of construction, operation and maintenance, and replacements will be repaid to the United States with interest at 3 percent per annum by revenues from power and water storage benefits in Lake Mead, and these returns are adequately guaranteed by formal contracts with power allottees, on the basis of repayment of construction costs within a 50-year period.

Status

The prime construction contract was awarded on March 11, 1931. On June 30, 1952, the project was approximately 96 percent complete and the installed capacity of the Hoover powerplant was 1,167,300 kilowatts. Installation of one 82,500-kilowatt unit (A–3) was completed in September 1952.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes preparation of specifications, issuance of invitations to bid, and award of contracts for furnishing and installing equipment for unit N–8 in Hoover powerplant and Hoover switchyard.

Justification

By the end of the current fiscal year, Hoover Dam and powerplant will be complete except for the installation of unit N–8 in the powerplant. Funds should be provided in fiscal year 1954 for the preparation of final designs and award of contracts for the installation of unit N–8 to bring the project to completion at the earliest practicable date. Early completion of the project is desirable not only to make an additional 82,500 kilowatts of power available to the defense activities in the Southwest but also to permit the Government to begin to realize as soon as possible a full return on its investment in completed facilities.

The total estimated cost has decreased from $173,900,000 to $172,070,000 (anticipated total obligations $163,960,000). This decrease results from refinements in the estimate to reflect actual costs for completed work and to the deletion of improvement work of both the dam and Boulder City. This improvement work is scheduled to be performed as part of the regular operation and maintenance activity.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Hoover Dam and Reservoir	$89,318,756	$89,318,756			
Hoover powerplant	58,589,936	52,958,936	$739,000	$358,000	$4,534,000
Hoover switchyard	11,865,693	11,439,167	34,000	20,000	372,526
General property (dam and reservoir)	5,389,929	5,389,929			
General property (Boulder City)	6,905,686	6,905,686			
Total cost	172,070,000	166,012,474	773,000	378,000	4,906,526
Stores		75,758	−31,421		−44,337
Transfers, credits, and other expenditures	−600,000	−819,757	220,000		−243
Interest on construction advances, payable from power revenues	−7,510,000	−7,393,374	−10,000	−5,000	−101,626
Total expenditures	163,960,000	157,875,101	951,579	373,000	4,760,320
Unliquidated obligations		600,908	−600,908		
Total obligations	163,960,000	158,476,009	350,671	373,000	4,760,320
Method of financing:					
Prior year balance available			[1] 350,671		
Allotments required				373,000	4,760,320

[1] Does not include $40,000 of construction and rehabilitation funds allotted to the Boulder Canyon project for improvement work at Boulder City but scheduled under "Operation and maintenance, Boulder City, Nev."

OPERATION AND MAINTENANCE

Boulder Canyon Project, Arizona-California-Nevada

Summarized financial data

Total, fiscal year 1952	$1,545,050
Fiscal year 1953:	
Allotment	1,553,000
Funds advanced by power allottees	24,697
Total obligations, 1953	1,577,697
Allotment, fiscal year 1954	1,654,710
Total obligations, 1954	1,654,710

JUSTIFICATION OF ESTIMATE

Location

Hoover Dam and powerplant are in the Black Canyon of the Colorado River on the Arizona-Nevada States' boundary, 450 miles upstream from the Gulf of California, 260 miles downstream from Bright Angel Crossing in the Grand Canyon of the Colorado, and 7 miles northeast of Boulder City, Nev.

General conditions

The capacity of Lake Mead, formed by Hoover Dam, is 31,047,000 acre-feet of which 9,500,000 acre-feet are reserved primarily for flood-control purposes, with incidental use for production of secondary power. Releases from Lake Mead for flood control and irrigation are to be reregulated by Davis Dam where a large quantity of additional power will be generated. Davis Dam is located 67 miles downstream from Hoover Dam. Water releases are used for the generation of electric power at Parker Dam located 155 miles downstream from Hoover Dam.

The project is designed to regulate the flow of the Colorado River for control of floods, storage for irrigation and municipal water supplies, improvement of navigation, and generation of electrical energy.

The Hoover powerplant is designed to generate more than 4 billion kilowatt-hours of firm energy and large quantities of secondary energy annually when all generating units are in operation. The present installed capacity is 1,249,800 kilowatts.

Under provisions of the Boulder Canyon Project Adjustment Act, the city of Los Angeles and the Southern California Edison Co., as agents for the United States, operate and maintain certain powerplant machinery and pertinent facilities.

Operation and maintenance costs incurred by the agents in operating and maintaining the machinery and facilities are not reflected in estimates presented by the United States, except for an amount of $50,000 which represents work to be performed by the United States for, and reimbursed by, the operating agents.

The project operation and maintenance costs are financed by allocations from power revenues as authorized by yearly appropriation acts. Improvements are financed by advances from the Colorado River Dam fund as authorized by appropriation acts.

Work proposed, 1954

	Program, 1954	Increase (+) or decrease (−) from 1953
POWER FACILITIES		
Electric generation	$1,252,400	−$91,350
For continuation of normal operation and maintenance of Hoover powerplant plus extraordinary items of repair. Completion of the removal of a large mass of unstable rock that hangs above the Nevada valve house. Decrease is due to reduction in amount of extraordinary maintenance.		
Other production expense	100,000	.....
For continuation of work on items such as protection facilities, and technical investigations, which concern but are not an integral part of electrical generation.		
Transmission and distribution expense	2,800	+1,900
For continuation of the relatively small operation and maintenance expense borne by the Government on Government-owned and operated facilities. Increase due to addition of facilities to this feature to be maintained.		
Replacements and improvements	299,510	+166,463
For replacements such as elevator equipment, steel stairs, expansion joint hose, water piping, powerhouse roof-drainage piping, passenger cars, station wagons, trucks, and miscellaneous equipment. For improvements such as a boat dock, trailer for moving 16.5-kilovolt OCB's in powerplant area, trailer equipped with oil-filter press and tank, 20,000-kilovolt-ampere transformer bank for 69-kilovolt service; and for improvements to structures and equipment such as intake tower-gate hoists, dam, powerplant, appurtenant works, offices, warehouses, and shops. Increase due principally to the scheduling of improvements on the operation and maintenance schedule.		
Total obligations, power	1,654,710	+77,013
Total obligations, all facilities	1,654,710	+77,01

Schedule of operation and maintenance program fiscal years 1952, 1953 and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
MULTIPURPOSE FACILITIES			
(Not applicable.)			
IRRIGATION FACILITIES			
(Not applicable.)			
POWER FACILITIES			
Operation and maintenance:			
Electric generation	$1,409,546	$1,343,750	$1,252,400
Other production expense	95,384	100,000	100,000
Transmission and distribution expense	978	900	2,800
Replacements and improvements	39,142	133,047	299,510
Total obligations, power	1,545,050	1,577,697	1,654,710
Total obligations, all facilities	1,545,050	1,577,697	1,654,710
Allocation: Power	1,545,050	1,577,697	1,654,710
Total obligations	1,545,050	1,577,697	1,654,710
Method of financing:			
Allotment	1,671,000	[1] 1,553,000	
Unobligated balances	−125,950		
Allotment required			[1] 1,654,710
Funds advanced by power allottees		24,697	

[1] Includes funds for certain costs of furnishing power and water supplied by the Boulder Canyon project (fiscal year 1953, $114,300; and fiscal year 1954, $113,800).

Project statistics

Feature or item	Unit	Actual fiscal year 1952	Estimated—	
			Fiscal year 1953	Fiscal year 1954
Storage dams and reservoirs	Number	1	1	1
Telephone lines	Miles	9.2	9.2	9.2
Operating roads	do	5	5	5
Power system:				
Annual sales	Kilowatt-hours	5,572,413,096	4,960,000,000	4,950,000,000
Total power revenues	Dollars	$9,247,719	$9,500,000	$9,500,000
Powerplants	Number	1	1	1
Plant capacity	Kilowatts	1,167,300	1,249,800	1,249,800
Patrol roads	Miles	15	15	15
Transmission lines	do	15	15	15
Substations	Number	1	1	1

Mr. JENSEN. You are requesting $373,000 for plans and specifications for one additional power unit which will provide an additional 82,500 kilowatts of power. This looks like a lot of money for plans and specifications for one unit. How can you justify spending $373,000 for plans and specifications for one power unit?

Mr. MCPHAIL. The plans and specifications will cover not only the unit itself but the necessary switchyard to get the power into the system. This amount of money is considered necessary to prepare and issue specifications for all the equipment involved including accessory switching equipment.

Mr. JENSEN. Mr. Lineweaver, do you have a statement?

Mr. MCPHAIL. I would like to submit a statement.

Mr. JENSEN. Without objection, it will be included in the record.

(The statement referred to follows:)

CONSTRUCTION AND REHABILITATION—BOULDER CANYON PROJECT, ARIZONA-NEVADA

The primary purpose of this project is to regulate the flow of the Colorado River for control of floods, for irrigation and municipal water supplies, for improvement of navigation, and for the generation of electrical energy.

Construction began in March of 1931. As of June 30, 1952, the project was approximately 96 percent complete. By the end of this current fiscal year the Hoover dam and powerplant will be complete except for the installation of the last unit, unit N–8 of the powerplant. The powerplant is designed to have an installed capacity of 1,332,300 kilowatts, and at the present time there are installed 1,249,800 kilowatts.

Funds in the amount of $373,000 are being requested in fiscal year 1954 for the issuance of specifications and award of contracts for the purchase of equipment and installation of unit N–8, requested by present allottees in order to provide this additional power for essential civilian needs and defense activities in the Southwest, including Nevada, Arizona, and California, which are now short of needed power capacity, and to provide more economic utilization of the present potentialities of this development. The installation of this unit with associated control, switching and transformation facilities will complete the planned and authorized construction of this project.

REPAIRS AND REPLACEMENT, MAINTENANCE, ETC.

Mr. JENSEN. Now we turn to operation and maintenance. Under "Operation and maintenance" you are asking for $1,654,710 for repairs and replacement, maintenance and so forth. How do you decide what part of this work is to be done by the Federal Government and what is to be done by the city of Los Angeles and the Edison Co. who are agents of the United States?

Mr. MCPHAIL. That is set out in the contracts with the operating agents and the regulations that have been established for the system. The operating agents—the city of Los Angeles is one and the Southern California Edison Co. is the other—operate the generating units and their controls and the necessary switchyard facilities. The Bureau of Reclamation operates the dams, the outlet works, and the power facilities in the plant, so that there is no confusion about who is responsible for what part of it.

I would like to point out that the allottees annually pay these operation and maintenance costs.

Mr. JENSEN. Does the Edison Co. stand any cost relating to this program?

Mr. MCPHAIL. Yes, sir. They stand, as allottees, whatever is their proportionate part of the output of the plant.

Mr. JENSEN. And what percentage is that?

Mr. MCPHAIL. Their cost is about 7 percent of the total for firm power and about 40 percent of the cost for secondary power. I would like to make it clear that neither the Southern California Edison Co. nor the city of Los Angeles gets any of the money here appropriated. This is all for expenditure by the Bureau.

Mr. JENSEN. I presume this project is paying out in accordance to schedule, as has been the case through the years?

Mr. MCPHAIL. Yes, sir, it is. It is different in this respect: Each year the expenditures and repayments are reconciled, and if there is a departure either up or down the rates for the following year are adjusted so as to compensate.

Mr. JENSEN. That sort of a contract has always appealed to me. I believe we would be in a sounder position and operating under better business principles if all our projects were handled as the Boulder

Canyon project, because, as you say, Mr. McPhail, whatever is expended during the previous year, whatever is the cost of doing business, is considered and taken into account when the rates are set for the following year. Even the amount that we pay the States involved in lieu of taxes is also taken into consideration with all other expenses. I think it is a very well established fact that the Boulder Canyon project operates on better business principles than any other project in this country.

Mr. McPHAIL. I would like to make one comment, Mr. Chairman, not disagreeing with what you say. The Boulder Canyon project is comparatively simple in this respect, it has no cost of irrigation to be picked up, which does complicate our requirements in many other projects.

Mr. JENSEN. I understand that.

COST OF POWER

Mr. FENTON. That is pretty cheap power. How does it compare with other areas?

Mr. McPHAIL. It is very low cost. The only development we have where the costs are lower is Grand Coulee. It is hard to make a comparison, because at Boulder Canyon the power is all taken at the bus bars by the allottees.

Mr. FENTON. What is the rate at Grand Coulee?

Mr. McPHAIL. At the same point the costs are about 1 mill per kilowatt-hour or slightly under at Grand Coulee, as compared to the cost of roughly 2 mills at Hoover Dam when you consider allottees costs of operation and maintenance.

Mr. FENTON. I wish you would put in the record the comparative rates at the bus bars.

Mr. McPHAIL. At those two plants?

Mr. FENTON. At all your plants.

Mr. McPHAIL. We will attempt to do that, Doctor.

(The matter referred to is as follows:)

ESTIMATED AVERAGE COST OF SURPLUS ENERGY FOR COMMERCIAL SALE AT THE PROJECT POWER PLANTS OF THE BUREAU

The estimated average costs of commercial electric energy at the powerplant high-tension switchyards of the multipurpose projects of the Bureau are as follows. These estimated project power costs are on the assumption that existing or authorized commercial power transmission facilities were not constructed and that all surplus energy not required by the projects would be disposed of at the powerplant switchyards.

Estimated average cost of energy at plant switchyards

	Mills per kilowatt-hour
Boise	2.7
Columbia Basin	.8
Hungry Horse	[1] 4.8
Minidoka	2.4
Yakima	3.2
Central Valley	2.7
Boulder Canyon	2.0
Parker-Davis	2.4
Yuma [2]	2.2

[1] Production cost per kilowatt-hour paid from revenues received by Bureau from BPA, marketing agent. Downstream benefits from Hungry Horse Dam will offset large amounts of this cast.

[2] Power facilities paid out. Present cost per kilowatt-hour covers operation, maintenance, and replacements costs only.

Estimated average cost of energy at plant switchyards—Continued

	Mills per kilowatt-hour
Rio Grande	5.1
Riverton	5.4
Shoshone	3.5
Colorado-Big Thompson	4.8
Kendrick	3.0
North Platte	7.8
Missouri Basin	3.4
Eklutna	9.1

Mr. BUDGE. Mr. Lineweaver, in view of the fact that this is such inexpensive power which goes to the two distributing agents, Southern California Edison and the city of Los Angeles, has any consideration ever been given to having the cost of power pay these nonreimbursable items such as the one we considered a moment ago?

Mr. LINEWEAVER. I may say that over the years the financial situation with respect to having the rate cover all the operations of the Colorado River as well as Hoover Dam and Boulder City, have been under discussion. So far the allottees have not felt that it was incumbent upon them to pay more than what the contracts provided for.

Mr. BUDGE. What happens here, the two distributing agents are sharing in what amounts to an actual subsidization by the Government in the overall picture, in that they take the benefits from one project that is making a profit, and they are not bearing the costs on the other projects which you include in the overall picture and which are operating at a loss to the Government, including the one we just discussed, which is a total loss to the Government.

Mr. LINEWEAVER. I may say, Mr. Budge, that I am quite sure the Bureau and the Department, if instructed to reopen the discussions that have gone on pro and con over the years, would be glad to see what, if anything, can be worked out with respect to that.

Mr. BUDGE. From the cost basis you are making the Hoover Dam a single unit, that is, from the revenue basis you are making it a single unit, but from the standpoint of cost to the Government, you are including the entire thing.

Mr. LINEWEAVER. Yes, sir.

Mr. KIRWAN. The other day a Congressman came in with a request for a transformer for a plant. The Bureau of the Budget would not grant the request. How can the Bureau of the Budget, just as Mr. Budge said, grant the request on the one hand to improve the water front and levees with this project and have it charged up to Hoover, while on the other hand they would not grant to this outfit running that magnesium plant a loan of $2 million to put in a transformer, and rightfully so. Now they want $8 or $10 or $30 million, whatever it is, and will until the end of time, as long as the Hoover Dam is there, to dredge that river, and yet let contracts to the city of Los Angeles and California Edison and only charge them part of the cost? I am not blaming you, but there is something wrong with the thinking of the Bureau of the Budget.

STATEMENT ON OPERATION AND MAINTENANCE

Mr. MCPHAIL. I would like to submit this statement on operation and maintenance.

Mr. JENSEN. Without objection it will be inserted in the record.

(The statement follows:)

OPERATION AND MAINTENANCE, BOULDER CANYON PROJECT, ARIZONA-CALIFORNIA-NEVADA (POWER FACILITIES)

A general description of this project is included in the construction statement previously presented.

An allotment of $1,654,170 is requested for fiscal year 1954 for normal operation of the Hoover powerplant that has at present an installed capacity of 1,249,800 kilowatts, and related electrical facilities. This allotment request does not include funds for the operation of those facilities which are the responsibility of the allottees. The fiscal year 1954 allotment request represents an increase of $77,013 over fiscal year 1953. Included in the allotment for operation and maintenance is $299,510 for the replacement of such items as elevator equipment, steel stairs, expansion joint hose, water piping, powerhouse roof drainage pipe and other miscellaneous equipment, and for improvements such as boat dock, trailer for moving 16.5-kilovolt OCB's in powerplant area, 20,000-kilovolt-amperes transformer bank for 69 service, and for improvements to structures. These replacement and improvement items are nonrecurring. The balance or $1,355,200 is for the normal operation and maintenance of the Hoover powerplant and its related electrical facilities.

OPERATION AND MAINTENANCE

BOULDER CITY ADMINISTRATION

Mr. LINEWEAVER. Do you want to finish the discussion of the Boulder City administration? We discussed that yesterday.

Mr. JENSEN. We discussed it yesterday, but at this time we will insert pages 132 and 133 of the summary data sheets and pages 86 to 90 of the justification.

(The matter referred to is as follows:)

BOULDER CITY PROJECT, NEVADA

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures	(1)	$630,000	$525,000
Total obligations	(1)	630,000	525,000
Less construction and rehabilitation allotment		−40,000	
Appropriation or estimate	(1)	590,000	525,000

[1] Included as part of Boulder Canyon project.

HISTORY OF PROJECT DEVELOPMENT

Location

Approximately 7 miles southwest of Hoover Dam, and 23 miles southeast of Las Vegas, Nev.

Purpose

To provide municipal facilities for employees of the several Federal agencies and the power operators (the Los Angeles Department of Water and Power and the Southern California Edison Co.) who operate the generating equipment at Hoover Dam.

Authorization

This project is a part of the Boulder Canyon project as authorized July 19, 1940.

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Joint facilities:			
Actual, June 30, 1952			
1953	91	1	
1954	79	1	
Regional CPA services:			
Actual, June 30, 1952			
1953			3.0
1954			2.0
Total:			
Actual, June 30, 1952			
1953	91	1	3.0
1954	79	1	2.0

OPERATION AND MAINTENANCE

BOULDER CITY, NEV.

Summarized financial data

Total, fiscal year 1952	
Fiscal year 1953:	
Operation and maintenance allotment	$590,000
Construction and rehabilitation allotment	40,000
Total obligations, 1953	630,000
Fiscal year 1954: Allotment	525,000
Total obligations, 1954	525,000

JUSTIFICATION OF ESTIMATE

Location

Boulder City municipal office, which is responsible for the operation of Boulder City, Nev., is located on United States Highway 93, approximately 7 miles southwest of Hoover Dam, and 23 miles southeast of Las Vegas, Nev. The city is built entirely on Government withdrawn land.

General conditions

The townsite is about 2 square miles in area and has a present population of nearly 4,000 persons. Originally constructed for the purpose of housing personnel working on Hoover Dam, the town now provides facilities for Government employees of the Bureau of Reclamation, the Bureau of Mines experimental station, and the National Park Service. The power operators (the Los Angeles Department of Water and Power and the Southern California Edison Co.), who actually operate the generating equipment at Hoover Dam as representatives of the power allottees, also have employees living in Boulder City. In addition to these employees directly connected with Government or associated endeavors, there is a considerable number of persons who operate private business establishments, as well as persons employed outside of Boulder City, and a certain number of retired persons.

In order to establish adequate facilities for a population of nearly 4,000, the city has provided a city management, police and fire protection, health and sanitation supervision, and maintenance departments for streets, sidewalks, and streetlights; park, lawn, and parkways; water and electric system; public buildings; and Government-owned dwellings.

During fiscal year 1952 Boulder City was separated administratively from the Boulder Canyon project in contemplation of eventually becoming an incorporated town under the laws of Nevada. It has taken over the control of all property now owned by the Bureau of Reclamation which is devoted to city welfare, and this property is being managed by the city administration as a separate project. The first city budget was appropriated for fiscal year 1953 in the amount of $590,000 which excludes funds for certain costs of furnishing power and water supplied by the Boulder Canyon project. The fiscal year 1954 request in the amount of $525,000 is submitted to cover the bare essentials

needed to operate the town during the period of liquidation of the Government investment, and the preparation of the inhabitants to assume the responsibilities of an incorporated town.

The special circumstances surrounding the affairs of the Boulder City municipality during this transition period are such as to render invalid most direct cost comparisons as between projected expenditures and cost experience in past years. There are many essential elements of modern local government not incorporated in municipal operation as previously conducted as a part of the Boulder Canyon project.

Work proposed, fiscal year 1954

Municipal facilities	Program, 1954	Increase (+) or decrease (−) from 1953
Electric system The amount of electric power, and area of maintenance for the city electric system, have been restricted due to the present agreement whereby the Bureau of Mines and National Park Service will contract for power through the Boulder Canyon project instead of the city administration as originally planned. No other changes in costs are anticipated from fiscal year 1953, and no replacements of property or equipment are allowed for in this estimate.	$18,200	−$44,300
Water system The decrease in 1954 is based on abandoning the water softening and treating plant in order to operate within the maximum allowances prescribed. The figure for 1954 merely consists of the cost of a superintendent and water-plant operators, chlorine and other chemicals, and estimated maintenance costs of the storage and distribution system.	56,000	−32,500
City management Under this group are included the city manager, comptroller, utilities billing office, city clerk, city engineer, and the library expense. No significant changes are contemplated for the fiscal year 1954, and the amount requested is the minimum requirement for the city during this transition period.	108,760	−1,740
City facilities This item covers the following activities: Police and fire protection; refuse collection and disposal; maintenance of Government buildings and Government-owned housing; and other minor activities incidental to normal operations of a small town. In attempting to curtail operations to meet the budget allowance, priority has been given to police and fire protection and refuse collection. These 3 items account for $85,300, and no changes have been made over the 1953 figures since they represent the minimum safe allowances. Therefore, the reductions will be reflected in the maintenance of streets, parks, housing, and public buildings.	277,200	−51,300
Replacements and improvements $20,000 of this total for 1954 is for extensions and improvements to the water and electric systems and the sewer system which the city is obligated to provide as new areas are developed. $8,730 will be earmarked for all replacements of furniture and office equipment, and the balance of $36,110 will be used to make all other replacements of automobiles and other heavy road equipment. It includes $8,600 for the replacement of grader now on hand, which was purchased in 1936 and is no longer in usable condition.	64,840	+24,840

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
City utility operations and maintenance		$151,000	$74,200
City management		110,500	108,760
City facilities maintenance		328,500	277,200
Replacements and improvements		[1] 40,000	64,840
Total obligations		[1] 630,000	525,000
Method of financing:			
Allotment ("Operation and maintenance" appropriation)		[2] 590,000	
Allotment ("Construction and Rehabilitation" appropriation)		[1] 40,000	
Allotment required			[2] 525,000

[1] Includes $40,000 appropriated in 1953 to Boulder Canyon project under construction and rehabilitation. Comparable reduction has been made in the construction program for Boulder Canyon project.

[2] Does not include funds for certain costs of furnishing power and water, supplied by the Boulder Canyon project (fiscal year 1953, $114,300 and fiscal year 1954, $113,800).

Mr. Lineweaver, if you have a statement I would like to have it inserted in the record.

Mr. LINEWEAVER. Yes. And also, as I said yesterday, I would have a more complete statement as to the status of the legislation, how we operate in the city, and we expect the increase in rents to bring about $100,000 in revenues during 1954.

Mr. JENSEN. We are glad to hear that.

Mr. FENTON. Does the Government own the housing?

Mr. LINEWEAVER. Yes; the housing and the land, the greater part of it.

Mr. FENTON. The greater part of it?

Mr. LINEWEAVER. Yes. Some housing has been built with private funds on Government land, and by allottees. The city of Los Angeles and the Southern California Edison Co. built some houses. But the greater part is what would be called the Government town.

Mr. JENSEN. I believe about 80 percent.

Mr. LINEWEAVER. Something like that.

I would like to submit these statments.

Mr. JENSEN. Without objection they will be inserted in the record.

(The statements referred to follow:)

SUMMARY STATEMENT ON ADMINISTRATION OF BOULDER CITY, NEV.

By 1937 Boulder City, Nev., had been transformed from a construction camp to a permanent town for employees engaged in operation of Hoover Dam and powerplant and other related activities. In 1949 Dr. Henry Reining of the University of Southern California made a survey of Boulder City which resulted in recommendations that the municipality be separated from the project and established as a self-governed entity similar to other normal American communities. Steps are being taken to attain this objective. Financial and physical separation from the project have been effected by administrative order insofar as possible. A city manager has been appointed and is now managing all city affairs. An advisory council has been elected by the local people to help resolve the many problems in separating the city from Government operation.

A draft of legislation was submitted to the Bureau of the Budget in July 1951 to accomplish the first separation phase of the Reining Report. This draft was returned and a revised bill has now been prepared to sell the property and accomplish complete separation of the municipality in one enabling act. The revised draft has not yet been cleared by the Bureau and the Department for transmittal to the Bureau of the Budget.

The anticipated expense of city operations during the first 6 months of fiscal year 1953 was $300,441 and the revenues from city operations were $245,952 of which $50,219 was income from rental of Government houses. The regional director has been instructed to increase the rental rates on Government housing in accordance with Bureau of the Budget circular A45. This increase in rental rates may provide as much as $100,000 in additional revenues during fiscal year 1954 making the total anticipated 1954 revenues approximately $600,000.

STATEMENT ON PROGRESS OF PROGRAM FOR BOULDER CITY ADMINISTRATION, FISCAL YEAR 1954

Boulder City, Nev., was established as a construction camp for Hoover Dam and power plant and grew to about 8,000 population at the time of peak employment. By 1937, most of the construction work was completed and Boulder City was transformed into a permanent operating town. During the early period as an operating community, population dropped to about 2,000 and subsequently has increased to almost 4,000 with establishment of the Bureau of Reclamation Regional Office at Boulder City and with Bureau of Mines establishment of research in titanium. The National Lead Co. has also recently purchased homes for their employees at Boulder City. With the recognition of Boulder City as a permanent community, problems of municipal administration have developed principally in relation to (*a*) establishment of responsible local self-

government, (*b*) means for eliminating the Federal Government from its real estate and municipal management responsibility, and (*c*) provision for the division of costs of Boulder City activities between the project account (payable as part of the power charges to the allottees) and the nonproject account. The resolution of these problems is especially difficult because of the preponderant Federal responsibility for safe and efficient operation of the great reservoir and powerplant and because of the Federal Government's role as sole landowner.

In recognition of the need for early development of practical means of resolving these major and attendant secondary problems, early in 1949 the Commissioner of Reclamation recommended, and by memorandum of July 26, 1949, former Secretary of the Interior Krug approved, the preparation of a report by independent consultant based upon analysis of the situation and information to be developed at public hearings. By mid-October 1949, Dr. Henry Reining, Jr., professor of public administration and political science at the University of Southern California, was appointed consultant and hearings officer.

Public hearings were conducted by Dr. Reining during the months of November and December 1949, at which extensive factual information and expressions of views were secured from the local residents, the power allottees, and representatives of the Federal agencies. A summary of that material is contained in the consultant's interim report of January 1950, copies of which were distributed locally in Boulder City. The consultant's report recommended the establishment of local self-government through a series of progressive phases. The first phase involves the segregation of municipal management from operation of the Boulder Canyon project, together with the financial adjustments consequent to division of costs between project and nonproject accounts. The latter features, particularly, require the enactment of legislation. The latter phases of local self-government, which would also require legislation, would vest increasing responsibility in the local community with ultimate establishment of a municipality incorporated under the laws of the State of Nevada.

Officials of the Bureau of Reclamation, working with representatives of the Office of the Secretary of the Interior, drafted a proposed secretarial order together with other documents to effectuate the plan of improvement, using Dr. Reining's report as a general guide.

Secretarial order No. 2650 entitled "Administration of Boulder City, Nev." was executed by Secretary Chapman on July 27, 1951. This order establishing administrative segregation between the Boulder Canyon project and the Boulder City municipality also provides for a Boulder City municipal office under the supervision of a city manager appointed by the Commissioner of the Bureau of Reclamation, and the establishment of an advisory council composed of representatives of the local residents, the power allottees, the director of region 3 of the Bureau of Reclamation, and other Interior agencies having employees in the area.

A staff representative of the Commissioner was designated to implement the provisions of order No. 2650. The keynote of the secretarial directive was to segregate the administration of Boulder City affairs from the Boulder Canyon project and to place such administration in the hands of a city manager. In this regard it was necessary first to establish the position of city manager within departmental and Civil Service Commission policy and thereafter to undertake recruitment for the position, again in positive compliance with civil service regulations. Such regulations required, among other things, that there be a determination of minimum requisites for qualification, announcement of a nonassembled examination, and the systematic rating of applications filed in response to the announcement.

While these activities were in progress under the auspices of the Civil Service Commission, the Commissioner's designated representative acted to implement other machinery for which provision was made in the Secretary's order. The first local elections in the history of Boulder City were conducted and an advisory council composed of elected representatives of the citizens and designated representatives of Federal establishments and the power allottees was established. The advisory council will serve in cooperation with the city manager and will provide an instrument for local expression in the conduct of local affairs. Inasmuch as Order No. 2650 provided that the citizens and power allottees, as well as the Federal agencies, should be consulted in the selection of a city manager, a special committee was created to afford a systematic means of expression on this subject. This special committee, like the advisory council, was composed of elected representatives of the citizens and designated representatives of the power allottees and the Federal agencies.

Tentative agreements were negotiated as to the division of administrative responsibility and its relation to assignment of personnel, property, and facilities as between the municipal operation and the Boulder Canyon project as such. Budget and accounting procedures directly related to a plan of municipal organization were prepared to insure minimum delay in a meaningful operation on the segregated basis. A number of the more serious problems which will be encountered in the various transition steps from a Federal town to a local self-governing, self-sustaining community were analyzed to provide guidance to the city manager in those phases of his responsibility. In general, the procedural and research work which was done in advance of the appointment of the city manager has provided guidelines for his day-to-day operations.

On February 26, 1952, the regional director, Boulder City, Nev., notified the Commissioner that the special committee elected to advise on selection of a city manager had reviewed papers and interviewed the three top applicants presented to the Bureau by the Civil Service Commission and had recommended Mr. Harold N. Corbin, of Portersville, Calif., as city manager. The regional director and Commissioner concurred in this recommendation and recommended the Secretary's approval of Mr. Corbin on March 14, 1952. Acting Secretary Northrop approved the appointment on March 24, 1952. Mr. Corbin entered on duty at Boulder City, Nev., on May 19, and the physical separation of the city from the Boulder Canyon project was put into effect on July 1, 1952, insofar as was administratively possible.

The city manager has devoted a great deal of time to the problem of "selling" the community citizens on incorporation and home rule. There is a considerable segment of the local people who are either directly opposed to separation and self-government or really do not know what they want. This public-relations work is very important if an affirmative vote on incorporation under the laws of the State of Nevada is to be consummated. The city manager is taking other steps to organize municipal administration in a manner similar to other normal American towns and to effect operating efficiencies. Proper city plans and zoning codes are being prepared to control and guide private residential and commercial development after incorporation. In the future, private builders or developers will be required to construct the streets, sidewalks, curbs, and utility extensions for all building developments much in the same manner as that required by most private towns. Matters of this nature are discussed with the advisory council.

The first draft of legislation to provide financial separation of Boulder City, Nev., from the Boulder Canyon project was transmitted to the Bureau of the Budget on July 27, 1951, for review and advice. This first draft of legislation was in accordance with the Reining report, which involved three phases to effect complete separation of the municipality.

On April 10, 1952, the Bureau of the Budget returned the draft of legislation to us, suggesting that we revise the bill, principally to move more directly toward self-government and incorporation in one enabling act by eliminating phase 2 of the Reining report. These revisions amounted to major changes. Consequently, the regional director and city manager at Boulder City were requested in June 1952 to redraft the legislation to accomplish sale of residential and commercial property, effect self-government, and encourage community action to seek incorporation in one enabling act.

The revised draft of bill was submitted to the Commissioner in September 1952. Several questions arose regarding the sale of residential property, the making of certain capital improvements to the city, and methods to encourage the people to seek incorporation. After a great deal of discussion and correspondence, the draft of bill was submitted to the Secretary of the Interior on December 24, 1952. Several administrative and policy questions in connection with the bill have been discussed with representatives of the Department during the past 2 months. It is expected that the revised draft of legislation will be ready for submission to the Bureau of the Budget some time in April 1953.

Operation and Maintenance—Boulder City, Nev.

Boulder City, Nev., is located on United States Highway 93, approximately 7 miles southwest of Hoover Dam, and 23 miles southeast of Las Vegas, Nev. The city is built entirely on reclamation withdrawn public land.

The townsite is about 2 square miles in area and has a present population of nearly 4,000 persons. Originally constructed for the purpose of housing personnel working on Hoover Dam, the town now provides facilities for Govern-

ment employees of the Bureau of Reclamation, the Bureau of Mines, and the National Park Service. The power operators (the Los Angeles Department of Water and Power and the Southern California Edison Co.), who actually operate the generating equipment at Hoover Dam as representatives of the power allottees, also have employees living in Boulder City. In addition to these employees directly connected with Government or associated endeavors, there is a considerable number of persons who operate private business establishments, as well as persons employed outside of Boulder City, and a certain number of retired persons.

In order to establish adequate facilities for a population of nearly 4,000, the city has provided a city management, police and fire protection, health and sanitation supervision, and maintenance departments for streets, sidewalks, and streetlights; parks, lawn, and parkways; water and electric system; public buildings; and Government-owned dwellings.

During fiscal year 1952 Boulder City was separated administratively from the Boulder Canyon project in contemplation of eventually becoming an incorporated town under the laws of Nevada. The first city budget was appropriated for fiscal year 1953 in the amount of $590,000, which excluded funds for certain costs of furnishing power and water supplied by the Boulder Canyon project. The fiscal year 1954 request in the amount of $525,000 is submitted to cover the bare essentials needed to operate the town during the period of liquidation of the Government investment, and the preparation for the residents to assume the responsibilities of an incorporated town. The special circumstances surrounding the affairs of the Boulder City municipality during this transition period are such as to render invalid most direct cost comparisons as between projected expenditures and cost experience in past years.

In addition there is $113,000 in power and water costs which are included in the Boulder Canyon propect program.

Construction and Rehabilitation and Operation and Maintenance

Davis Dam Project, Arizona-Nevada and Parker Dam Project, Arizona-California

Mr. Jensen. Now we turn to Davis Dam project, Arizona-Nevada. We will insert at this point in the record the special data requested from the Bureau of Reclamation and pages 316 through 321 of the justification. Since the operation of this project is combined with operation of the Parker Dam, we will insert in the record ot this point summary data on the Parker-Davis project on pages 96 through 100 of the justification.

(The data referred to follow:)

CONSTRUCTION

Davis Dam Project, Arizona-Nevada

Construction

	Actual as of June 30, 1952	Estimate1, 1953	Estimated, 1954
Expenditures	$104,375,289	$6,542,306	$4,058,265
Unliquidated1 obligations	2,307,364	−2,071,099	−236,265
Total obligations	106,682,653	4,471,207	3,822,000

Operations and Maintenance

Included in the Parker-Davis project, Arizona-California-Nevada.

HISTORY OF PROJECT DEVELOPMENT

Location

Southeastern Nevada, west and central parts of Arizona, and southeastern section of California.

Purpose

To provide for better regulation of the Colorado River below Hoover Dam, regulating water for domestic use (including irrigation) within the United States and for delivery of water at the United States-Mexico international boundary as required in article 12 (b) of the Mexican Water Treaty. The project also provides for the production and transmission of electrical energy.

Authorization

Finding of feasibility was made by the Secretary of the Interior on April 26, 1941.

Initial date

Planning	1902
Advanced planning	1941
Construction	(August) 1942

Date of functional completion of construction

Fiscal year 1955.

Fiscal year and amount of initial allotment of appropriations for construction

Fiscal year 1942, $4,000,000.

COSTS

Original estimated cost, $41,200,000.[1] Present estimated cost, $118,902,046.

CONSTRUCTION AND REHABILITATION

DAVIS DAM PROJECT, ARIZONA-NEVADA

Summarized financial data

Estimated total obligations		$116,815,764
Total obligations to June 30, 1952		106,682,653
Allotment available, fiscal year 1953	$554,330	
Prior-year balances available	3,916,877	
Total obligations, fiscal year 1953		4,471,207
Allotment, fiscal year 1954	3,822,000	
Total obligations, fiscal year 1954		3,822,000
Balance to complete		1,839,904

JUSTIFICATION OF ESTIMATE

Authorization

Under the Reclamation Project Act of 1939 (53 Stat. 1187), a finding of feasibility was made by the Secretary of the Interior on April 26, 1941, which was incorporated in House Document 186, 77th Congress, 1st session.

Location

Features of this project are located in southeastern Nevada, west and central parts of Arizona, and southeastern section of California. The dam and reservoir are located on the Colorado River in Clark and Mohave Counties of

[1] See Parker-Davis project, operation and maintenance, for allocation of cost and other data.

Nevada and Arizona, respectively, approximately 67 miles below Hoover Dam. The powerplant and switchyards are located on the Arizona side of the river. Project transmission lines extend north and south from Davis Dam along the Colorado River from a point near Boulder City, Nev., to Yuma, Ariz., and also extend into central and southeastern Arizona, with substations strategically located along the transmission lines.

Description

The project will provide for better regulation of the Colorado River below Hoover Dam, regulating water for domestic use (including irrigation) within the United States and for delivery of water at the United States-Mexico international boundary as required in article 12 (b) of the Mexican Water Treaty. Water-storage facilities of the project include Davis Dam and Reservoir (Lake Mohave). The project will also provide for the production and transmission of electrical energy. Power-generation facilities consisting of five 45,000-kilowatt generators are located in the Davis Dam powerplant. Transmission facilities consist of 1,087 miles of line in a high-voltage transmission grid radiating from the switchyard adjacent to the dam and powerplant, and substations which provide power to customers at distribution voltage and serve as sectionalizing points in the longer lines. The transmission-system lines include a connection between the Hoover, Davis, and Parker powerplants, the Davis-Mesa-Coolidge line, second lines from Parker to Phoenix and Phoenix to Tucson, and a line from Parker via Blythe to the Gila drop No. 4 near Pilot Knob. Also included are the crosstie line between the first and second Phoenix-Tucson line, an extention from Tucson to Cochise, improvement to the existing system in the Yuma area, and a short extension to provide service to the Wellton-Mohawk division of the Gila project. Negotiations are now in progress with the Arizona Power Authority on a contract whereby the Bureau will transmit the output of a steam electric generating station to be built by the Arizona Public Service Co. to electric loads throughout Arizona. Upon execution of this contract, the Bureau plans to build about 43 miles of 115-kilovolt transmission lines to connect the steam plant to the Parker-Davis transmission system, build three new substations, and enlarge or alter 10 existing substations and switchyards.

Repayment

The portion of the project cost allocated to power is $93,695,206. This amount will be repaid from power revenues with interest at 3 percent. In addition to this amount, $24,284,137, allocated to irrigation and cost of servicing the Mexican treaty, will be repaid from power revenues without interest; $922,713 is considered nonreimbursable since it is composed mainly of contributions from Public Roads Administration and the State of Arizona. In addition to the revenue which will be realized from the sale of energy from Davis powerplant, the Davis project will receive revenue from the Arizona Power Authority for wheeling Arizona's share of Hoover energy and the energy from the utility's steam-electric plant.

Status

Construction began in August 1942. As of June 30, 1952, the project was approximately 88 percent complete. Davis Dam is functionally complete and the powerplant is in full operation. All major transmission lines and substations, with the exception of Prescott substation and the new substations for steam-plant wheeling, have been substantially completed and are in operation. Work is under way on all of the remaining transmission facilities, including preconstruction work on the new substation additions. Operation and maintenance buildings, except the headquarters building and the second section of the warehouse, are substantially completed; work on the latter two is nearing completion.

Work proposed for fiscal year 1954

During fiscal year 1954 all work at Davis Dam will be completed. The fiscal year 1954 program also provides for completion of Prescott, Maricopa, and Cochise substations and Knob switchyard; installation of the second transformer bank, now temporarily installed at Prescott substation, in the Parker 230-kilovolt yard; procurement of the second unit and associated equipment for Gila substation; initiating construction of third circuit for the Gila-Wellton-Mohawk line; installation of the project microwave system; and the bulk of the construction work on the new substations and additions for APA wheeling.

Justification

The need for power in the area served by the Davis Dam project which existed at the time of the project's authorization has become more acute since that time. Until the remaining facilities are completed it will not be possible to transmit available project power to meet the increasing power demands of the high-priority customers within the area. Work is well underway on all substations that require increased capacity to serve these top-priority powers users, including preconstruction work on the new substations and additions for APA wheeling. Failure to provide additional facilities in these areas will result in serious losses in revenues to the Government and loss of production in crop and industry, including defense industries, and will also seriously hinder the development of arable lands.

The construction of three new substations and the enlargement of 10 substations and switchyards, together with transmission-line connections to the new Saguaro steam plant, are included in the project plan to provide a mutually advantageous power integration system for the Bureau of Reclamation, the Arizona Power Authority, and private utilities. This plan revision was brought about by the financing of the Saguaro steam plant by privately owned utilities and their request through the Arizona Power Authority that the Davis transmission system be utilized to transmit energy from the steam plant. This plan was approved by the Congress in fiscal year 1953 with the new Saguaro steam plant located at Tucson. Subsequent to this approval, the Public Service Company of Arizona changed the location of the Saguaro steam plant from Tucson to a point southeast of Red Rock, in order to obtain a more adequate water supply. The new location, while approximately only 30 miles from the original site, will require the Bureau to make further changes of some magnitude in its plan, if the identical system integration is to be achieved.

The new steam plant location makes it necessary to—

(1) Reroute the second Phoenix-Tucson line, adding 12 miles to its length;

(2) Construct a tapline from the steam-plant switchyard to E. D. 5, a distance of 12 miles;

(3) Construct a tapline from the steam plant to the Oracle substation in order to connect with the first Phoenix-Tucson line, a distance of 21 miles.

The total estimated cost of the project of $118,902,056 (anticipated total obligations, $116,815,764) has not changed since the fiscal year 1953 budget submission. The substation additions for APA wheeling are estimated to cost $3,363,600. The increase in this cost over the estimate of $3,032,400 submitted a year ago is compensated for by reductions in estimates for the older features which will be incorporated in the new additions.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Davis Dam and Reservoir	$36,975,000	$34,373,806	$2,441,722	$159,472	
Powerplant	24,375,000	23,492,441	757,559	125,000	
Terminal facilities at Davis Dam	4,241,000	4,065,485	160,000	15,515	
General plant at Davis Dam	2,104,000	2,075,085	28,915		
Davis-Kingman and Needles 69-kilovolt taplines	304,601	266,153	38,448		
Davis-Mesa-Coolidge 230-kilovolt line	16,203,935	14,640,666	570,226	657,768	$335,275
Davis-Hoover interconnection	3,901,019	3,810,319	90,700		
Davis-Parker 230-kilovolt line	2,089,811	2,087,561	2,250		
Parker 230-kilovolt switchyard	4,186,646	4,003,646	60,000	33,000	90,000
Second Parker-Gila 161-kilovolt line	3,236,912	2,520,700	72,000	237,212	407,000
Second Parker-Phoenix 161-kilovolt line	1,076,972	1,076,972			
Phoenix substation additions	4,228,716	3,026,562	1,097,154	105,000	
Second Phoenix-Tucson and Coolidge-ED-5 crosstie 115-kilovolt lines	4,931,041	4,273,965	610,576	46,500	
Tucson-Cochise 115-kilovolt line	1,579,659	1,126,659	428,000	25,000	
Yuma 34.5-kilovolt improvements and extensions	1,813,246	1,076,151	89,095	311,000	337,000
Power supply to Wellton-Mohawk divisions	1,107,850	706,400	45,450	27,000	329,000
Project carrier (current system)	100,000	83,708	16,292		
Substation additions (APA wheeling contracts)	3,363,600	13,661	697,000	2,149,887	503,052
General plant at Parker Dam	478,233	471,733	6,500		
General plant (transmission system)	575,815	48,894	62,841	464,080	
System operation and maintenance area	2,029,000	1,668,032	360,968		
Total cost	118,902,056	104,908,599	7,635,696	4,356,434	2,001,327
Construction facilities		660,648	−448,148	−106,000	−106,500
Stores		1,210,242	−585,242	−144,000	−481,000
Project investigations		4,923			−4,923
Transfers, credits, and other expenditures	−2,086,292	−2,409,123	−60,000	−48,169	431,000
Total expenditures	116,815,764	104,375,289	6,542,306	4,058,265	1,839,904
Unliquidated obligations		2,307,364	−2,071,099	−236,265	
Total obligations	116,815,764	106,682,653	4,471,207	3,822,000	1,839,904
Method of financing:					
Allotment, fiscal year 1953			554,330		
Prior year balance available			3,916,877		
Allotments required				3,822,000	1,840,000

PARKER-DAVIS PROJECT

Operation and Maintenance

	[1] Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$1,913,103	$2,268,000	$2,502,710
Unliquidated obligations	261,653		
Total obligations	2,174,756	2,268,000	2,502,710
Less funds advanced by water users		154,040	248,310
Appropriation or estimate	[1] 2,278,600	[2] 2,268,000	2,254,400

[1] Appropriation amount of $103,844 excess of needs.
[2] Appropriation amount of $154,040 excess of needs.

History of Project Development

Location

In southeastern California and Nevada, south and northwestern Arizona. Both Parker and Davis Dams are located on the Colorado River.

Purpose

To operate and maintain a multiple-purpose project for irrigation, municipal water supply, flood control, power production, recreation, and fish and wildlife.

Authorization

The Parker Dam power project was authorized by the River and Harbor Act of August 30, 1935 (49 Stat. 1028). The Davis Dam project was authorized on April 26, 1941, by the Secretary of the Interior, under provisions of the Reclamation Project Act of 1939 (63 Stat. 1187).

COSTS

Original estimated cost:	
Davis Dam project only	$41,200,000
Allocation of cost power	41,200,000
Present estimated cost:	
Davis Dam	118,902,056
Parker Dam power	24,201,808
Total	143,103,864
Joint allocation of cost:	
Irrigation	13,646,011
Power	106,014,361
Flood control	
Mexican Treaty	10,398,078
Contributions	13,045,414

REPAYMENT

Amount to be repaid and repayment period

Amount: Power: $130,058,450.
Regular Repayment Period: 143–2006.
Total: Construction costs allocated to commercial power will be repaid within 50 years from date individual facility becomes revenue producing.

Repayment of costs allocated to irrigation and Mexican Treaty

Power: Interest component: $24,044,089.

OPERATIONS

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Power (kilowatts)	345,000	345,000	345,000	345,000
Average power rates (mills per kilowatt-hour):				
Firm—Davis contracts at 50 percent load factor	5.4	5.4	5.4	5.4
Nonfirm (average)	3.3	3.3	3.3	3.3

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Power:			
Actual, June 30, 1952	357	7	
1953	418	3	
1954	451	3	
Denver office:			
Actual, June 30, 1952			3.7
1953			.8
1954			.8
Regional CPA services:			
Actual, June 30, 1952			9.0
1953			13.0
1954			11.0
Total:			
Actual, June 30, 1952	357	7	12.7
1953	418	3	13.8
1954	451	3	11.8

Other project statistics, see p. BR–100.

OPERATION AND MAINTENANCE

Summarized financial data

Total obligations, fiscal year 1952	$2,174,756
Allotment, fiscal year 1953:	
Power	2,268,000
Unobligated balance	−154,040
Funds advanced by MWD	154,040
Total obligations, 1953	2,268,000
Allotment, fiscal year 1954:	
Power	2,254,400
Funds advanced by MWD	248,310
Total obligations, 1954	2,502,710

JUSTIFICATION OF ESTIMATE

Location

The Parker-Davis project is a consolidation of two separate projects, namely, the Parker Dam power project, Arizona-California, located in southeastern California and southwestern Arizona, and Davis Dam project, Arizona-Nevada, located in southeastern Nevada and northwestern Arizona. Parker Dam and Davis Dam are located on the Colorado River 15 and 103 miles, respectively, north of Parker, Ariz. A transmission-system grid of the combined projects, consisting of 1,570 miles of transmission lines, traverses Mohave, Yuma, Maricopa, Pinal, Pima, Yavapai, and Cochise Counties in Arizona, Clark County in Nevada, and San Bernardino, Riverside, and Imperial Counties in California.

The project's 25 substations, including stepup banks at power plants, totaling 1,553,000 kilovolt-amperes, are located at Davis Dam, Phoenix, Coolidge, Tucson, Prescott, Mesa, Maricopa, Cochise, Yuma, and Yuma-Mesa pumping plant near Yuma, 3 Wellton-Mohawk pumping plants near Yuma, ED–2, ED–4, and ED–5 substations south of Coolidge, all in Arizona; and at Parker Dam, Blythe, and Pilot Knob in California; and at Basic Magnesium in Nevada. Water for power is from the Colorado River at Parker Dam and Davis Dam.

General conditions

The Parker-Davis project is a multiple-purpose project as the dams serve as storage reservoirs for irrigation, municipal water supply, flood control, power production, recreation, fish and wildlife, etc. The project consists of 2 dams and reservoirs, 2 hydroelectric powerplants, 25 substations comprising 1,553,000 kilovolt-amperes installed capacity, and 29 transmission lines totaling 1,570 miles. The Parker and Davis powerplants have an installed generating capacity of 120,000 and 225,000 kilovolt-amperes, respectively. The transmission system allows interchange of power and energy between the Parker, Davis, and Hoover powerplants, furnishes power and energy to project customers and to the Yuma-Mesa and Wellton-Mohawk pumping plants on the Gila project, and also serves to wheel Hoover energy for the States of Arizona and Nevada. Construction of Parker Dam Reservoir and appurtenant works was financed by funds advanced by the Metropolitan Water District of Southern California. Construction of the Parker powerplant and transmission system was financed by appropriated funds; one-half of the powerplant costs will be repaid to the United States by the district. The United States retains ownership of the dam and appurtenant works and one-half of the power privileges and reserves the right to control all water passing the dam and to utilize the top 10 feet of storage capacity for flood control. Construction of the Davis Dam project is financed from appropriated funds. The operation and maintenance costs of the Parker-Davis project are financed from funds appropriated from power revenues and from funds advanced by the metropolitan water district.

Work proposed, 1954

	Program, 1954	Increase (+) or decrease (−) from 1953
POWER FACILITIES		
Electric generation	$1,022,007	+$156,815
For normal operation and maintenance. Increases in wage rates and cost of supplies, and additional staffing requirements caused by change of Davis Dam project from construction status to operation and maintenance status, result in requirement for additional funds.		
Other production expense	77,710	−7,290
Transmission and distribution expense	1,098,941	+75,588
For normal operation and maintenance of transmission facilities.		
Replacements and improvements	304,052	+9,597
For replacement of 11 passenger vehicles, 8 trucks, 1 road grader, improvements to substations, transmission lines, and access roads, replacement of communication equipment, tools, and to construct hospital, office, post office, firehouse, 1 residence, and garage at Parker Dam.		
Total obligations, power	2,502,710	+234,710
Total obligations, all facilities	2,502,710	+234,710

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
POWER FACILITIES			
Operation and maintenance:			
Electric generation	$690,237	$865,192	$1,022,007
Other production expense	57,170	85,000	77,710
Transmission and distribution expense	1,075,219	1,023,353	1,098,941
Replacements and improvements	352,130	294,455	304,052
Total obligations, power	2,174,756	2,268,000	2,502,710
Total obligations, all facilities	2,174,756	2,268,000	2,502,710
Method of financing:			
Allotment	2,278,600	2,268,000	
Unobligated balance	−103,844	−154,040	
Allotment required			2,254,400
Funds advanced by Metropolitan Water District		154,040	248,310

Project statistics

Feature or item	Unit	Actual fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
Power system:				
Annual sales	Kilowatt-hours.	1,693,941,806	1,400,000,000	1,200,000,000
Total power revenues	Dollars	$5,821,922	$7,671,500	$6,731,500
Power plants	Number	2	2	2
Plant capacity	Kilowatts	345,000	345,000	345,000
Patrol roads	Miles	1,375	1,375	1,375
Transmission lines	do	1,571	1,571	1,571
Substations	Number	25	25	25

DAVIS DAM PROJECT

Mr. JENSEN. You are asking for $3,822,000 for fiscal 1954. Do you have a statement to make in justification of this item?

Mr. MCPHAIL. I have a statement which I will submit. I will summarize by saying the work at Davis Dam project will be completed

this fiscal year. Several substations that have been under construction will be cleaned up.

An arrangement has been made whereby the power from a steam-electric generating power plant to be constructed by private interests in the State will be wheeled over the Davis transmission system. This arrangement requires increased substation capacity. There has been one change since this matter was described before the committee last year. The Arizona Public Service Co. found it necessary to move the plant location a short distance to get a more adequate water supply, so a little more transmission line is required.

(The statement submitted follows:)

CONSTRUCTION AND REHABILITATION—DAVIS DAM PROJECT, ARIZONA-NEVADA

The Davis Dam project provides (1) regulation of the Colorado River below Hoover Dam for use within the United States and for delivery of water as required in article 12 (b) of the Mexican Water Treaty and (2) the production and transmission of electrical energy to the southern parts of California and Nevada and to central and southern Arizona. The power plant has a capacity of 225,000 kilowatts and the transmission facilities consist of 1,087 miles of high-voltage transmission lines. Construction of the dam and power plant began in August 1942. As of January 1, 1953, Davis Dam is functionally complete and the power plant is in full operation. All major work on the originally planned transmission system with the exception of Prescott substation has been completed.

The Bureau has contracted with the Arizona Power Authority to wheel the authority's Hoover Dam power over the Davis transmission system. Negotiations are also in progress with the authority on a contract whereby the Bureau will transmit for the authority the output of a steam-electric generation power plant to be built by the Arizona Public Service Co. to supply electric loads throughout Arizona. The plan was described to the Congress in fiscal year 1953 when the plant was expected to be located at Tucson.

Subsequently, the Arizona Public Service Co. changed the plant location to a point southeast of Red Rock because of a more adequate water supply. The new location is approximately 30 miles from the original site. When the transmission contract with the authority is executed, the Bureau proposes to construct about 43 miles of 115-kilovolt transmission lines to connect the steam plant to the existing Parker-Davis transmission system, construct 3 new substations and enlarge or alter 10 existing substations and switchyards. This arrangement will avoid the duplication of transmission facilities and conserve much critical material. It will also provide transmission of power at a lower cost than any other method and the arrangement is urged by all operating agencies in the area. The increased transmission system investment associated with the wheeling of the steam plant power will be returned to the United States through the wheeling charges to be collected.

The fiscal year 1954 program of $3,822,000 provides for most of the completion work at Davis Dam and continuation of work on the transmission system, particularly the substations required in connection with the wheeling of power.

Mr. JENSEN. Your justifications state in part:

negotiations are now in progress with the Arizona Power Authority on a contract whereby the Bureau will transmit the output of a steam-electric generating station to be built by the Arizona Public Service Co. to electric loads throughout Arizona. Upon execution of this contract, the Bureau plans to build about 43 miles of 115-kilovolt transmission lines to connect the steam plant to the Parker-Davis transmission system, build 3 new substations, and enlarge or alter 10 existing substations and switchyards.

Is there money in this request of $3,822,000 for the construction of some of these things that I have just read off here?

Mr. MCPHAIL. Yes, sir. There was also money provided in fiscal 1953 for that same purpose.

Mr. JENSEN. In fact, a good share, I presume, of the money that is requested will be used for the construction of these facilities?

Mr. McPHAIL. That is correct.

Mr. JENSEN. How far along has this work progressed?

Mr. McPHAIL. It has not progressed very far; since we would not make expenditures until a contract had been agreed upon covering the entire matter. An agreement was reached only quite recently.

Mr. JENSEN. The construction of the Davis Dam proper is completed, is it not?

Mr. McPHAIL. Yes, sir. There is just some small cleanup work around the powerplant and in the spillway of the dam itself. The plant is operating.

Mr. JENSEN. And all the power that is generated there is being sold today?

Mr. McPHAIL. Yes, sir. It is all under contract.

PARKER-DAVIS PROJECT

Mr. JENSEN. On operation and maintenance we consolidated the Davis Dam project with another project last year.

Mr. McPHAIL. The situation is this, Mr. Chairman. We consolidated the request for operation and maintenance funds for the Davis project and the Parker project 2 or 3 years ago. They are physically so interconnected they operate as one project.

Mr. JENSEN. So the maintenance and operation item is consolidated for the two projects now?

Mr. McPHAIL. That is right, and there has been legislation introduced to actually financially consolidate both projects from a repayment standpoint. The legislation was passed by the House and reported out favorably by the Senate committee, but due to lateness in the session it did not get through the Senate last year. It has been reintroduced this year.

Mr. JENSEN. You are asking for $2,254,400 for operation and maintenance for those consolidated projects?

Mr. McPHAIL. That is correct.

Mr. JENSEN. It looks like an awful lot of money for operation and maintenance. Your maintenance must be very low, because it is all new structure, is it not?

Mr. McPHAIL. Yes, sir. It is all fairly new. Even the Parker facilities are only about 10 years old. But it is a very extensive system. It covers essentially half the State of Arizona, and it involves about 350,000 kilowatts.

Mr. JENSEN. Yes; but have you a statement to justify further this expenditure of $2,254,400 for operation and maintenance. I realize it covers a big area, but most of that request must be for operations alone, because maintenance certainly cannot amount to much on this new construction. How can you spend that much money? Surely you cannot spend half a million dollars on maintenance on comparatively new construction. And even if you did spend $500,000 on maintenance, it appears that $2 million for operations is an exorbitant amount.

Mr. McPHAIL. Of the $2,254,400, $304,000 is for replacements and improvements, which involve such things as the purchase of a road grader, replacements of temporary office and post-office building, replacement of temporary hospital building.

Mr. JENSEN. Road grader?

Mr. McPHAIL. Yes, sir.

Mr. JENSEN. What do you use that for?

Mr. McPHAIL. One of the costly operations is maintaining roads for access to these lines through the desert area.

Mr. JENSEN. You mean the Federal Government has to maintain roads in order to get to these facilities?

Mr. McPHAIL. Yes, sir. We certainly do.

Mr. JENSEN. They are roads that are used purely and simply by the Bureau of Reclamation?

Mr. McPHAIL. That is correct.

Mr. JENSEN. And Army engineers?

Mr. McPHAIL. They are used entirely by the Bureau of Reclamation.

Mr. JENSEN. And that is because your transmission lines traverse territory where other roads, public roads, are not available?

Mr. McPHAIL. That is right. There simply are no roads in a good deal of the area except the low-class roads that we built for control purposes.

Mr. JENSEN. How often do you have to travel over those roads?

Mr. McPHAIL. We generally try to patrol them once a month.

Mr. JENSEN. So you have to keep these roads graded up in order to drive a car over them once a month?

Mr. McPHAIL. I might say it this way: The area is one in which the precipitation primarily comes in cloudburst form. We have a good many washouts, and whenever we do, we have to get the grader in there and smooth the roads so that we can get through. There may be long periods when we have very little of that work to do, and then there may be a great deal. It is a sandy country and washes badly when we have heavy rains.

Mr. JENSEN. Well, now, a jeep will go over almost any kind of a road, and it would appear to me that you would not have to do much grading or smoothing of a road to travel over it in a jeep. I hope you do not travel over these roads that you claim are so bad in Buicks or Chevrolets.

Mr. FENTON. How about Pontiacs?

Mr. JENSEN. You have a few Pontiacs.

Mr. McPHAIL. I assure you, Mr. Chairman, that only a minimum amount of work is done on these roads so that we can keep access to these areas that require patrolling.

Mr. JENSEN. Well, it is a small item no doubt, but it is rather difficult for me to understand why you have to have a road grader to keep any road in shape just to travel over it once a month.

Mr. McPHAIL. We have found by experience, Mr. Chairman, that we have to do that in order to get heavy line trucks in there for heavy repair work, and even to get cars in there for normal patrol duties.

Mr. JENSEN. Now you are making more sense than before. I had not given that thing any particular thought. It is a fact that you do have to occasionally get large trucks in there.

Mr. McPHAIL. That is right. If you have a transmission pole to go out you have a load of some 1,500 to 2,000 pounds to haul in for replacement.

Mr. FENTON. Where is this steam plant that the people of Arizona are going to build?

Mr. McPHAIL. It will be located at this point [indicating on map], Dr. Fenton.

Mr. FENTON. Where is this 45-mile transmission line going to be that you propose to build?

Mr. McPHAIL. That is based on a line connecting with our line at Oracle Junction, a line connecting back to the line that runs to Coolidge, and we propose to route the line from Phoenix to Tucson into the plant and out again. Thus we will have several short lines, 3 each running about 5 miles in length, and 1 [indicating] about 30 miles.

BUILDING POWER LINES FOR PRIVATE INDUSTRY

Mr. FENTON. Why do we have to build power lines for private industry?

Mr. McPHAIL. The arrangement here is one that is of mutual benefit both to private industry and the Bureau. With this arrangement we will get the continuity of service that comes through standby and backup from this plant [indicating].

We will reduce the losses that are now involved in the transmission system, since power from our sources will pick up loads of the private utilities back toward our generation, and in turn this plant will pick up the loads of the Bureau down toward the extremes of the system. It seems reasonable that we should own and operate all the backbone transmission system. We will get payment for this in the way of a wheeling charge for the power transmitted and also payment sufficient to repay with interest over the repayment period the cost of additions that are made due to the steam plant only.

Mr. FENTON. How much is that 45 miles of transmission line going to cost?

Mr. McPHAIL. That will be roughly $450,000, I would guess.

Mr. FENTON. Are there not any existing lines there at all?

Mr. McPHAIL. The existing lines there are shown on this map in the gray [indicating]. There are no existing lines across this stretch [indicating].

Mr. FENTON. What is the distance across there?

Mr. McPHAIL. This distance [indicating on map] is roughly 30 miles from the steam plant to the connection of the line to the east, and these short lines, connecting with the west, about 5 miles each.

Mr. FENTON. What is the north-south mileage from Tucson up to Coolidge, or that junction where the word "Coolidge" is above there?

Mr. McPHAIL. I would judge that is about 45 or 50 miles from here up to here [indicating]. These lines [indicating] are all constructed now. The heavy blue ones are the only ones involved in this proposal.

Mr. FENTON. What is down there in that area that makes it necessary to have those lines; what facilities are down there; are there irrigation projects there?

Mr. McPHAIL. Yes, sir; there are a large number of pumping installations scattered through this entire area [indicating]. The steam plant is being built by the utility to pick up the increased loads that are coming in due to the expansion of irrigation, and due to the expansion of the copper-mining industry. Two rather large copper mines are being opened up in this general vicinity, and also to take care of the increasing loads in the Phoenix and Mesa areas.

EXISTING LINES

Mr. FENTON. And there are not any existing lines now going laterally across there?

Mr. MCPHAIL. No, sir; there are not.

Mr. FENTON. All right.

Now, you were talking here a moment ago with the chairman about maintenance. What is the amount that you are asking for for operation and maintenance?

Mr. MCPHAIL. $2,254,400.

Mr. FENTON. I believe the chairman suggested, this being a new facility, that there should not be very much maintenance cost on it at the present time.

I recall when we visited this project when it was under construction that you found some faults there on the side of the mountain which were causing a great deal of disturbance and it was costing a great deal of money to correct those faults. Have those faults been corrected?

Mr. MCPHAIL. Yes, sir; they have.

Mr. FENTON. I thought maybe some of this maintenanace money was being paid out on that account.

Mr. MCPHAIL. No, sir; that has all been corrected. It was at the Davis Dam, and it was all corrected during the construction of the Davis Dam and powerplant.

Mr. FENTON. It is now a safe and sound project?

Mr. MCPHAIL. Yes, sir; it is.

TRANSMISSION LINES BUILT BY PRIVATE POWER COMPANIES

Mr. JENSEN. Why could not the private utilities operating in that area, who are getting most of this power, build these transmission lines and these facilities which are requested in this bill, and which you speak of? Why is the Federal Government required to build these lines?

Mr. MCPHAIL. Well, Mr. Chairman, the only new lines are these rather short stubs into the plant. All of the backbone transmission systems is owned and operated by the Bureau.

Mr. JENSEN. Now, wait; you say these short stub lines?

Mr. MCPHAIL. Yes, sir.

Mr. JENSEN. These short stub lines are to connect up the private utilities' transmission lines with the Bureau's facilities, are they not?

Mr. MCPHAIL. That is correct; yes, sir.

Mr. JENSEN. Why do they not build them?

Mr. MCPHAIL. As I said before, Mr. Chairman, all of the main transmission lines are owned by the Bureau.

We have operating crews in the area and it is desirable, in order to achieve maximum flexibility, that these lines run into and out of the plant.

We think, as everybody else does down there who is involved in this problem, that the transmission system should be under one control and under one ownership. The joint wheeling contract involved in this is being made with the Arizona Power Authority by agreement with the private utility in the area and the authority. This will permit power to be produced from this plant and wheeled over the

Bureau's transmission system and coordinated with power which is available to the State from Boulder Dam and Davis Dam.

Mr. JENSEN. That is all very well, and we know someone has to do that. The question is should the taxpayers of the country do it or should the private utilities do it and charge rates commensurate with their expenditures and the cost of doing business.

Now, how far along are these transmission lines?

Mr. MCPHAIL. They have not been started.

Mr. JENSEN. None of them have been started?

Mr. MCPHAIL. No, sir.

Mr. JENSEN. All right. Now, then, can you tell us exactly how much is in this budget request for 1954 for the building of these transmission lines and the related facilities which you mentioned?

Mr. MCPHAIL. The transmission lines involve $465,000.

Mr. JENSEN. And the related facilities, such as substations, and so forth?

Mr. MCPHAIL. The total estimated cost, including all of the substations, is $3,363,600.

Mr. JENSEN. Now, was any money appropriated in the fiscal year 1953 for these items?

Mr. MCPHAIL. Yes, sir; there was.

Mr. JENSEN. And none of that money has been expended to date? How much was appropriated in 1953 for these purposes?

Mr. LINEWEAVER. $697,000.

Mr. JENSEN. And how much of that has been spent to date?

Mr. MCPHAIL. Only a comparatively small amount.

Mr. JENSEN. Get that amount and put it in the record.

Mr. MCPHAIL. Up to June 30, 1952, it was $13,661, and for fiscal year 1953 through February 28 it was $32,309, a total of $45,970.

Mr. JENSEN. I suggest that you hold any further expenditures for this item in abeyance until Congress acts, because this looks to me like a case where the Federal Government is spending money for things that are almost purely for the benefit of the private utilities.

I defend the private utilities when I see that they are right, but there are times when they like to have the Federal Government build lines for them, spend that money for them so they will not have to spent it, and then they take the benefits that are derived from such expenditures of the people's money. It appears to me that here we have a case that is in that category.

Mr. MCPHAIL. Might I ask a question in connection with that, Mr. Chairman? Are you speaking of the transmission-line portion only when you make that remark, or also the substation additions, because in connection with the substation additions primarily what we are doing is increasing the transformer sizes so that greater amounts of power can be taken from the present system.

Mr. JENSEN. I presume you will almost have to build these substations, increase the volume, increase the capacity of them because of the fact that the Bureau should have, as I see it, in this instance, the ownership of those substations that you have there, but I see no reason why you should be building transmission lines for the private utilities from which they will derive most of the benefit.

Mr. FENTON. Will the gentleman yield there?

Mr. JENSEN. Yes.

Mr. FENTON. How large a steam plant is this, and how much is it costing?

Mr. MCPHAIL. The plant will be rated at 200,000 kilowatts. I could not tell you, Doctor, what it will cost. I do not have the figures on that.

Mr. FENTON. You have not any idea what this steam plant is costing you in Arizona?

Mr. MCPHAIL. I could not say for sure.

Mr. JENSEN. That is a privately owned steam plant.

Mr. FENTON. I know, but I thought he might know the cost of it.

Mr. MCPHAIL. It will probably cost from $150 to $200 a kilowatt. That would be my best guess.

Mr. FENTON. It is going to take about $3 million for coordinating facilities, like transmission lines and transformers, that cost more than the plant itself.

Mr. MCPHAIL. No; it will be somewhat less, in my opinion, but it will be very much less than would be the situation if it were required that an independent transmission system be built to take the output of this plant to the points of use.

Mr. FENTON. Can this thing be justified for the amount of service that it will provide for that area?

Mr. MCPHAIL. Oh, yes; I think very well justified.

It will be at a much lower cost than would otherwise be involved.

Insofar as the Government is concerned we will get more net revenues out of the Parker-Davis system than we would without it.

All of the cost would be paid back with 3 percent interest. It is, really, I think, an extremely good arrangement for all of the parties concerned. The general idea of this integration, I think, is extremely good, and it has been so voted by everyone concerned in that area, the private utilities, public bodies, and others.

Mr. FENTON. That is all, Mr. Chairman.

Mr. JENSEN. Mr. Lineweaver, I am going to ask that you make an effort to ascertain if the private utilities are in a position to build these transmission lines, if they are or if they are not, and to tell us why they cannot build them with their own resources, or if they can build them with their own resources.

Mr. LINEWEAVER. All right, sir.

(The information requested follows:)

The matter of the Arizona Power Authority and/or the Arizona Public Service Co. constructing the transmission lines necessary to connect the Saguaro steam plant of the company with the Bureau's existing transmission system has been discussed with officials of both the company and the authority. Officials of both organizations have stated to the Bureau that the construction of this transmission facility by either of them and its isolation as to ownership are most undesirable. However, they will have to study the matter more thoroughly and cannot give a definite answer at this time.

Mr. JENSEN. I am going to tell you frankly that no one has talked to me about this. No private utility has approached me on this matter, but it just appears to me that there might be an opportunity here to save a little money for the taxpayers.

Mr. LINEWEAVER. Very well, sir; we will make those inquiries. I am not clear as to exactly how we can approach it to get a firm answer, but we will endeavor to do so.

Mr. JENSEN. You can certainly ask the private utility people, if the private utility people should not, in all fairness, build these lines with their own resources.

Mr. LINEWEAVER. You mean the Arizona Power Authority and the private utilities both?

Mr. JENSEN. Yes, whoever markets power in that area.

Mr. LINEWEAVER. Very well, sir, we will endeavor to get that information as promptly as possible.

Mr. JENSEN. All right.

WHEELING CHARGES

Mr. McPhail, under your contract now with the Arizona Power Authority and the private utility, to whichever agency that contract runs, will the wheeling charges which you anticipate pay for these increased facilities?

Mr. MCPHAIL. No, not altogether. They will pay for a large share of them, but the contract contemplates that about $2 million worth of them would be paid as an extra charge at the rate of 7.6 percent per year on the cost.

Mr. BUDGE. Has that contract been entered into?

Mr. MCPHAIL. No, sir; it has been negotiated, but it has not been executed as yet.

Mr. BUDGE. How far along is this steam plant in construction?

Mr. MCPHAIL. It is well started. The units have been on order for some time. It is under construction now. In fact, they are having difficulties getting enough construction power out to the site to carry on the construction work, and we are seeking to get one of these short lines in to increase the power supply for construction.

Mr. BUDGE. When the utility started the construction of this steam plant what commitment did it have from the Bureau of Reclamation to take this power out to the Bureau's lines?

Mr. MCPHAIL. The only commitment was that we were in favor of an arrangement whereby it could be done. The utility, I think, was in such a situation for an increased power supply that it felt that it had to go ahead in any event.

Mr. BUDGE. Now, one of two things must be true. When they located this steam plant out there away from any transmission facilities they either must have had a commitment from the Bureau of Reclamation that the Bureau would build those lines in there, or else they intended to build them themselves; which was it?

Mr. MCPHAIL. They had no commitment from the Bureau. We have been in negotiation on the matter for a long time.

I think that they felt encouraged sufficiently to go ahead with the development by the action of the Congress in appropriating for fiscal year 1953 operations, where an appropriation was made for the purpose. In the Bureau we have refused to make expenditures under that appropriation until we actually had a contract.

Mr. BUDGE. If you had not led them to believe, or made a firm commitment that the Bureau would build these lines into the private utility's steam plant, then it seems to me that they must have in their planning, in line with what the chairman was saying a few minutes ago, anticipated building these lines themselves. One of the two things is true.

Mr. McPhail. I think they certainly expected the Bureau to do it.

Mr. Budge. Why?

Mr. McPhail. They made an appearance before the Congress in support of this item a year ago, and the money was appropriated by the Congress. As a result I think they felt that they had a pretty good assurance that construction would proceed in line with the testimony which was given in connection with that appropriation.

Mr. Budge. This situation, Mr. Chairman, is just the reverse of the usual Bureau procedure.

Usually we have Bureau power developed in a multiple-purpose dam, and then the Bureau builds its lines to take the power out to connect with the distributing lines.

In this instance we have the Bureau going backward on it.

They are building lines in to connect with the private utility plant which was located at a point away from any transmission facilities, and, certainly, either the Bureau made a commitment to this private utility that the Bureau would build the lines into the private utility's steam plant, or else this private utility must have envisioned, at least, the possibility that they would have to build their own transmission lines to get from their own steam plant out to the Bureau's distributing lines.

Mr. McPhail. I would like to assure, you Mr. Budge, that the Bureau made no commitment.

We did agree with those people to present the matter to the Congress, which we did last year, and an appropriation was secured. We have refused to make expenditures for construction, however, until we actually had a contract, and therefore we have not made expenditures of any amount, except some small amount of engineering work, and that is all.

Mr. Budge. I would assume that you would not enter into a contract to take this power out from the private utility's steam plant until you had the money to build the lines.

Mr. McPhail. That would certainly be correct, although I would like to point out that there was an appropriation for the purpose in the fiscal year 1953.

Mr. Budge. Well, just because you received an original appropriation I do not believe the Bureau would want to be in a position to bind itself to a contract where Congress would be forced to appropriate additional money in order to live up to the Bureau's contract.

Mr. McPhail. That is certainly our customary procedure. Contracts are made for construction and like purposes on the basis of an original appropriation having been made by the Congress for the purpose.

Mr. Budge. Why has this contract been held up?

Mr. McPhail. Because we did not have a contract, and we did not think it was proper to proceed with the construction until we did have a contract.

The reason that the contract has not been executed up to this time is largely one due to negotiation within the State, between the Arizona Public Service Commission and the Arizona Power Authority which the Bureau had no part of. They were not willing to enter into a contract with the Bureau until they had their internal differences straightened out.

Mr. BUDGE. I am sure, then, that if the internal differences had been straightened out the Bureau would not have entered into a contract which would have bound the Congress to build these lines into that steam plant. That is what we are saying.

Mr. MCPHAIL. Yes, sir; I think that would have been the normal procedure. In all of our contracts we have always the clause, "Subject to availability of appropriations," but in this case we did secure an actual appropriation after outlining the complete plan before the Congress.

SAGUARO STEAM PLANT

Mr. BUDGE. Now referring to these transmission lines, that we are talking about, there are no present transmission facilities of any kind at this Saguaro steam plant, are there?

Mr. MCPHAIL. No, sir; there are not.

Mr. BUDGE. So, your purpose is to run lines from the Bureau's existing lines into the steam plant being built by the private utility?

Mr. MCPHAIL. That is correct.

Mr. BUDGE. Relative to your statements as to maintenance, will you explain what this nonreimbursable item of $922,713 is as contained at the top of page 318 of the justifications?

Mr. JENSEN. Off the record.

(Discussion off the record.)

Mr. KIRWAN. I do not think the utilities would have built that line there on account of no people living there in that area.

Mr. MCPHAIL. No, sir; there is no purpose for the line so far as a direct market is concerned. The line is for the purpose only of connecting with the Bureau's system so as to make one integrated system in the area.

Mr. KIRWAN. I have a hazy memory of it, but it is my recollection that last year in the testimony here it was shown that it was not generally like other arrangements made up in the North where we have power, but they wanted to make that connection there and the utilities were not serving the people. They did not have a good market down there. There was nothing for them to go out into, and they are trying to get such an arrangement down there.

That is all.

Mr. BUDGE. I am not familiar with this project, other than from the discussion here this morning, but it seems to me that what has happened is the private utility decided to relocate the steam plant where there was available water, and they located it out where there is no load factor of any kind and out where there are no transmission facilities of any kind. Now, they are building their generating plant, and the Government is going into the area, into the generating plant itself to bring the power out.

Now, the utility must have had some arrangement as to bringing the power out by way of transmission lines before it would start the cosntruction of the generating plant itself.

Now, what is this item of $922,713, the nonreimbursable item to which I have referred?

Mr. MARKWELL. I think I can clear that up very briefly, Mr. Budge.

Congress, in 1946, passed a law (Public Law 562, 79th Cong., 2d sess.), the general effect of which was that when any agency of the Government of the United States shall build a dam in such manner

that it will constitute and serve as a suitable and adequate foundation to support a public highway bridge upon and across such dam and to design and construct upon the foundation thus provided a public highway bridge upon and across such dam, the extra cost of putting the road across the dam would be borne by and through the Public Roads Administration when the highway department of the State in which such dam shall be located jointly with the United States Commissioner of Public Roads shall first determine and certify to such agency that such bridge is economically desirable and needed as a link in the State or Federal-aid highway systems, and shall request such agency to design and construct such dam so that it will serve as a suitable and adequate foundation for a public highway bridge. This was done in the case of Davis Dam, so that that part of the cost of Davis Dam attributed directly to the highway across the top of the dam and across the spillway, is considered nonreimbursable because it came from funds advanced from the Public Roads Administration. Those funds would not have been expended on this project if we had not been requested to do so by the Public Roads Administration and the States of Arizona and Nevada.

Mr. BUDGE. Why is the actual cost of the construction of a road across the spillway almost $1 million?

Mr. MARKWELL. That is very largely due to the fact, Mr. Budge, that the spillway is wide, and required extensive bridge construction.

Mr. BUDGE. Yes; I have crossed quite a few spillways in my time, but is it a fact that it cost $922,713 to build a road across the spillway?

Mr. MARKWELL. Across the spillway and the crest of the dam and also for the approach roads as requested by the States of Arizona and Nevada. However, the principal portion of the cost was required for the bridge across the spillway.

Mr. BUDGE. I assume that was on a grant basis, as far as Public Roads is concerned?

Mr. MARKWELL. Yes, sir.

Mr. BUDGE. What did the State of Arizona contribute to that?

Mr. MARKWELL. I cannot answer that, sir. The funds for the highway bridge and the highway across the dam were advanced by the Public Roads Administration under the provisions of a contract among the Public Roads Administration, the States of Arizona and Nevada, and the Bureau of Reclamation. As I recall, and Mr. Golzé can correct me on this, the funds were transferred from the Public Roads Administration directly to the Bureau of Reclamation.

Mr. BUDGE. You have been reimbursed; have you not?

Mr. MARKWELL. Yes, sir; but we include the item as part of the total cost of the project, and point out that this amount is nonreimbursable.

MICROWAVE SYSTEM

Mr. BUDGE. How extensive a project is the microwave system in this area?

Mr. MCPHAIL. It is not very extensive yet. At present we actually have no microwave system, although it is going to become necessary that we do install some microwave soon.

Mr. BUDGE. You have no microwave system at all at the present time?

Mr. MCPHAIL. That is my understanding.

Mr. BUDGE. How much is contemplated in this request for microwave?

Mr. MARKWELL. May I interpolate there, Mr. Budge? As I recall it, a contract has been awarded for the microwave system, but it has not been installed.

Mr. MCPHAIL. There is $464,080 in the 1954 program which covers the procurement and installation of the microwave system.

Mr. BUDGE. Is that item in your list under general plant transmission system?

Mr. MCPHAIL. Yes, sir.

Mr. BUDGE. Why is that not listed as microwave instead of transmission system?

Mr. MCPHAIL. It is part of the control system for the transmission system. It involves both communication and control. We ordinarily consider it as an adjunct to a transmission system, just as we do when we have carriers on the transmission wires themselves.

Mr. BUDGE. What is the total amount of these contracts that Mr. Markwell referred to a moment ago that have been awarded for this microwave?

Mr. MARKWELL. I will have to get that for the record; I do not know.

Mr. BUDGE. Approximately how much is it?

Mr. MARKWELL. I would hate to guess, Mr. Budge.

Mr. BUDGE. Did you make a justification for the fiscal year 1953 for the microwave system?

Mr. MCPHAIL. Pardon me, Mr. Budge, I did not get your question.

Mr. BUDGE. Did you make a justification before the committee for the fiscal year 1953 for the microwave system?

Mr. MCPHAIL. I believe so, although I would have to check my memory on that; I am not certain.

Mr. BUDGE. It was something new. None of it has been done yet, but contracts have been awarded, you say. Does anyone else here know whether that was justified in 1953?

Mr. MCPHAIL. Could I check the record on that?

Mr. LINEWEAVER. We are trying to find out now, Mr. Budge, but if we cannot we will insert the facts in the record, whatever they are.

(The matter referred to follows:)

STATEMENT ON THE PROPOSED MICROWAVE COMMUNICATION FOR THE TRANSMISSION SYSTEM OF THE DAVIS PROJECT

The transmission facilities of the Davis Dam project include over 1,000 miles of high voltage transmission lines interconnecting the powerplants at Hoover, Davis, and Parker Dams and distributing the power from those plants to load centers. At the present time, the integrated operation of this complex and extensive power system is being accomplished primarily by means of a carrier current system which serves as a system of communication and, to a limited extent, as a means of remote control of facilities. During periods of adverse weather conditions, complete failures are common. It is, therefore, essential that steps be taken as soon as possible to provide more adequate and dependable communication equipment for efficient operations of the Davis transmission system and for remote control of equipment. It has been found that the installation of a microwave system is the most practical and economical solution to this problem. As a result, the justifications for appropriations submitted to the Congress for fiscal year 1954 includes for the first time a request for funds for this microwave system which will cost a total of about $475. During the current fiscal year the only activity under way on this item will be a small amount of work on further studies and the preparation of designs and

specifications. During fiscal year 1954, the $464,080 requested for general plant—transmission system will be utilized to award contracts and complete the installation of the microwave system.

Mr. BUDGE. What will be the total outlay for the microwave system?

Mr. MCPHAIL. The total estimated cost is $475,000.

Mr. BUDGE. What area will that embrace?

Mr. MCPHAIL. That will embrace the area from Phoenix, Ariz., to Parker-Davis Dam.

Mr. BUDGE. That is all.

SOLANO PROJECT, CALIFORNIA

Mr. KIRWAN. At this point I would like to ask the permission of the Chairman to get off of the project we are now on.

I want to ask Mr. Lineweaver if he will place in the record a full statement on the Solano project in California, what the present status of it is, what you asked of the Bureau of the Budget last fall, the appropriation history last year, whether it is a new start, and any other pertinent facts about it. Place that in the record.

Mr. LINEWEAVER. Yes, sir; we will.

(The matter referred to follows:)

SOLANO PROJECT, CALIFORNIA

A description and the status of the Solano project is outlined in the following paragraphs:

Authorization

The Secretary of the Interior on November 11, 1948, found the project feasible under provisions of section 9 (a) of the Reclamation Project Act of 1939.

Financial history

A request for an initial construction appropriation for the Solano project has been included in the estimates submitted to the Bureau of the Budget each fiscal year since authorization of the project. In addition, amendatory funds were requested at the time of authorization and again for fiscal year 1953. However, because of the then existing no-new-starts policy, all requests were disallowed by the Bureau of the Budget and no fund request for the project was presented to the Congress. The appropriation of $3,000,000 for initiation of construction in fiscal year 1953 was made as the result of a congressional write-in to provide funds for the 10 reclamation new starts. The Appropriation Act providing the initial construction funds contained a proviso requiring that a determination be made as to whether the Solano project is to be constructed as a unit of the Central Valley project or as an independent project as originally authorized.

Location

The project is located largely in Solano County, Calif., which county adjoins the northeast extremity of San Francisco Bay. A part of the Monticello Reservoir area extends northwest into a portion of Napa County, Calif.

Description

The project provides for a storage reservoir at the Monticello Dam site of approximately 1,600,000 acre-feet to be created by the construction of a concrete arch dam located on Putah Creek below Monticello. Other facilities include a small concrete and earth-fill diversion dam downstream; a 38-mile main canal with a small terminal reservoir, and the necessary wasteways, laterals, and drainage works. A total of 67,100 acres of project lands will receive a firm water supply and 42,200 acre-feet of water will be furnished annually for municipal and industrial use.

Repayment

Negotiations are in process with the Solano County Flood Control and Water Conservation District. On February 29, 1953, this district approved the form

of the contract to purchase the entire firm yield of water from the project storage facilities. It is contemplated that water revenues will return the full reimbursable cost within a 50-year period.

Status

No construction funds had been made available for the Solano project prior to June 30, 1952. General investigations and advance planning funds have been used in the studies for and the preparation of the Definite Plan Report, which was approved on February 24, 1953. A soil survey and land classification study was undertaken, and on September 18, 1952, the Secretary of the Interior certified that this study had been completed and that the project lands were susceptible to production of agricultural crops by irrigation. In the meantime, legislation was introduced in Congress to make the Solano project a division of the Central Valley project.

In pursuance of the conference report on the 1953 appropriation act, a joint Senate subcommittee held open hearings in California in November 1952 and adopted the following report:

REPORT OF THE JOINT SUBCOMMITTEE OF THE SENATE COMMITTEE ON APPROPRIATIONS AND THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS ON THE CONSTRUCTION OF THE SOLANO COUNTY PROJECT, CALIFORNIA

Pursuant to the requirements of the reports of the Senate Committee on Appropriations and the conference report on the Interior Department appropriation bill, 1953, as hereinafter cited, the joint subcommittee appointed to determine whether the Solano County project should be constructed as a unit of the Central Valley project, submits the following report.

In its report (p. 11, S. Rept. No. 1803, 82d Cong., 2d sess.) on the Interior Department appropriations bill, 1953, the Senate Committee on Appropriations stated:

"The committee has included $3 million in the bill for the Solano County project, California. This project was authorized for construction by a finding of feasibility by the Secretary of the Interior. There are now pending before the appropriate House and Senate legislative committees bills which would reauthorize this project as a part of the Central Valley project. In approving funds in the 1953 bill, the committee does so with the understanding that they will not be used to initiate construction of the project until there is a determination as to whether or not the project is to be constructed as a unit of the Central Valley project. By deferring construction until this is done the local interests will be afforded an opportunity to appear before the committees and make known their views in regard to the construction of this project. Pending that determination, the funds are to be available only for the preparation of specifications for construction contracts."

In the conference report (p. 7, H. Rept. No. 2451, 82d Cong., 2d sess.) on the Interior Department appropriation bill, 1953, it was agreed by the managers of both Houses that—

"Funds for the Solano County project in California have been allowed with the understanding that they will not be used to initiate construction of the project until there is a determination as to whether or not the project is to be constructed as a unit of the Central Valley project. It is further understood that this determination is not to be made until all local interests have had an opportunity to be heard by the proper legislative committee with respect to the question of reauthorization of the project."

Subsequently, Senator Hayden, for the chairman of the Senate Committee on Appropriations, appointed Senator Knowland, of California, and Senator Chavez, of New Mexico, to act as members on a joint subcommittee to consider the evidence on the Solano County project matter and to make the required determination. Senator O'Mahoney, chairman of the Senate Committee on Interior and Insular Affairs, named Senator Anderson, of New Mexico, Senator Cordon, of Oregon, and Senator Murray, of Montana, as members of the joint subcommittee.

A quorum of the joint subcommittee met on Friday and Saturday, November 28 and 29, 1952, at Sacramento, Calif. Following a trip over the project area, the joint subcommittee heard all local witnesses who appeared both in favor of or opposed to the project or for or against any change in the authorization. Attached hereto is the official record of the testimony and evidence presented at the hearings.

Subsequent to the hearings, on January 21, 1953, the electorate of Napa County rejected by 5,068 noes to 3,984 yes votes a bond issue on the $3 million Coyote Dam bond issue. By this action, the people of Napa County have shown that they were not willing to take the necessary steps to provide for the storage of water in Putah Creek. From a practical standpoint this action eliminated the major official opposition which was presented to the committee.

It is the finding of the joint subcommittee that construction of the project should proceed as presently authorized and not as a unit of the Central Valley project. It is recommended that all actions necessary to initiate construction of the project be taken at once by the proper officials, and that copies of this report be furnished to the Secretary of the Interior, Commissioner of Reclamation, and the Director of the Bureau of the Budget.

WILLIAM F. KNOWLAND, California, *Chairman.*
DENNIS CHAVEZ, New Mexico.
GUY CORDON, Oregon.
JAMES MURRAY, Montana.
CLINTON P. ANDERSON, New Mexico.

During February and March of this year, a subcommittee of the House Interior and Insular Affairs Committee held hearings on the Solano project. On April 1, 1953, the House Interior and Insular Affairs Committee adopted the following resolution:

"RESOLUTION

"*Be it resolved by the Committee on Interior and Insular Affairs of the House of Representatives,* That the conditions precedent to the initiation of construction of the Solano County project, California, as set forth in the conference report (p. 7, H. Rept. No. 2451, 82d Cong., 2d session) on the Interior Department appropriation bill, 1953, have been satisfied. It is the finding of this committee that construction of the Solano County project should proceed as authorized and not as a unit of the Central Valley project, and said Solano County project is hereby reauthorized in accordance with the revised definite plan report, Solano project, California, dated December 15, 1952: *Provided,* That interest on the domestic water investment at the firm rate of the cost of the money to the United States, as determined by the Secretary of the Treasury, plus amortization payments on the reimbursable funds advanced for the project, shall be paid into the general fund of the Treasury each year as collected: Be it further

"*Resolved,* That a copy of this resolution be furnished the chairman of the Senate Appropriations Committee, the chairman of the House Appropriations Committee, the Secretary of the Interior, the Commissioner of Reclamation, and that a copy be included in the permanent records of the Committee on Interior and Insular Affairs, House of Representatives.

"Approved by the Committee on Interior and Insular Affairs of the United States House of Representatives, this 1st day of April 1953.

"A. L. MILLER, *Chairman.*

"Attested:
"ORLAND T. HUYCK, *Chief Clerk.*"

In the light of these resolutions, the Secretary of the Interior, on April 2 had under consideration a recommendation to proceed with construction of Monticello Dam, on which designs have been completed. Advertisements for bids were withheld pending action by the congressional committees as set forth in the above resolutions.

FISCAL YEAR 1953 AND FISCAL YEAR 1954 PROGRAM

Of the initial $3 million appropriation for the Solano project, approximately $2.5 million remains available to initiate construction of Monticello Dam, dependent on action resulting from the resolutions of the congressional committees. No request for additional funds for fiscal year 1954 was pending at the time the House appropriation hearings closed on April 2.

Justification for Solano project

The project is designed to meet a critical shortage of water at important national defense establishments and the municipal and industrial water demands of the cities of Vallejo, Benicia, Fairfield, and Suisun, as well as to provide irrigation water in Solano County. Substantial benefits will be provided for flood control and recreation. Existing water supplies are inadequate to meet the

municipal, industrial, agricultural, and military needs of the area. These needs are increasing rapidly. The earliest possible completion of this project is necessary to alleviate this serious water shortage.

PARKER-DAVIS DAM PROJECT

EFFECT OF CONSOLIDATING ACCOUNTING SYSTEM

Mr. LINEWEAVER. Mr. Chairman, I would like to submit for the record a statement of the Bureau's view of the effect on its accounting system of the congressional appropriation action in consolidating the operation and maintenance of the Parker Dam and Davis Dam projects. I say that for the reason that we have had some inquiries from the Generl Accounting Office as to this matter and we feel it should be in the record.

Mr. JENSEN. Without objection, it is so ordered.

(The matter referred to follows:)

STATEMENT ON THE CONSOLIDATED OPERATION AND MAINTENANCE OF THE PARKER DAM AND DAVIS DAM PROJECTS

The projects are similar in scope. Each consists of a dam, reservoir, powerplant, and power transmission system on the lower Colorado River in Arizona, California, and Nevada. Parker Dam is approximately 88 river-miles south of Davis Dam and they are thus interconnected both by river regulation and by a common transmission line system.

Parker Dam was completed in 1938 and the Parker powerplant was placed in operation in 1942. The Davis Dam is now substantially complete and the Davis powerplant began initial operation in fiscal year 1951. The two projects were so designed as to have a common transmission system for the combined output of both plants and the physical facilities constructed under the separate projects actually intermingle and overlap.

When the first O. and M. budget for the Davis Dam project was developed, for fiscal year 1951, it was apparent that large savings could be made in accounting and in clerical time and expense if the two projects were considered as a single entity. Consequently the fiscal year 1951 O. and M. budget was prepared and approved as a single Parker-Davis operation.

Substantial savings in administrative, accounting, and clerical expense result from handling Parker-Davis as a single accounting entity instead of as two separate projects. The principal savings are in billing and collection costs for power sold; in accounting for inventories and maintenance supplies and equipment; and in the handling and distribution of labor and other personnel. Smaller but significant savings are also made in the handling of general ledger accounts, funds, and in budget preparation.

Because power sales are from a common transmission plant, it would be extremely difficult and costly to identify monthly billings to customers with separate projects, and to prepare separate billings where contracts permit delivery of power from either project. Because of the physical integration of transmission lines, substations, and switching facilities, it would be extremely uneconomical to make project transfers of operating and maintenance costs. It is doubtful if the constant shifting of labor and supplies from one project to another could be maintained with any degree of accuracy except on a cost basis. The consolidation also avoids duplicate supervisory personnel and duplicate stocks of materials and repair parts.

In operating the consolidated projects, however, proper accounts are maintained for investment controls and costs of the separate facilities so that no essential information is lost through the combined accounting and budgetary process.

MICROWAVE EQUIPMENT

Mr. BUDGE. Mr. Chairman, we had some unfinished business as of this morning in regard to this item under "General plant transmission

system" and there was some testimony that that was for the installation of a microwave and that it was justified before this committee in 1952 or 1953, but the witnesses were going to get some further information on that program and I understand they have it at this time.

Mr. JENSEN. What project was that to be on?

Mr. BUDGE. For the Davis Dam project. There is an item in this budget of $464,080, which is shown in the justifications as "General plant transmission system."

Mr. MCPHAIL. The specific question which I understood you to ask us, Mr. Budge, was whether or not that item had been covered in the 1953 bill and the 1953 hearings. I was not sure and investigated that during the noon hour and found it was not, but that this is the initial presentation in connection with the microwave system, and it is for work in fiscal year 1954.

Mr. BUDGE. This is a new program, then, for fiscal year, 1954?

Mr. MCPHAIL. That is correct.

Mr. BUDGE. What is the item of $62,841 for under this same classification for 1953?

Mr. MCPHAIL. That is for radio equipment and mobile equipment in some of the automobiles and work of that nature. Also, I am informed $10,000 is for planning work in connection with the microwave system.

Mr. MARKWELL. Mr. Budge, I would also like to correct my testimony, by stating that my memory served me incorrectly. The little contract we awarded was for very high frequency radio instead of microwave.

Mr. BUDGE. Mr. Lineweaver, I think you will appreciate the fact that the members of the committee would have a great deal of difficulty in identifying this item of $464,080 as a new start on this microwave installation on the Davis Dam project. Do you think of any other items in this budget that you are justifying today that are, in effect, so far as the knowledge that the committee has concerning them, hidden in the budget?

Mr. LINEWEAVER. You mean on the Davis Dam project, or do you mean all the way through?

Mr. BUDGE. On any project.

Mr. LINEWEAVER. I cannot think of any right off the bat, Mr. Budge, but I will have the budget examined over the weekend and see if there is anything of that character in there.

The Bureau of the Budget has usually been very thorough in its scrutiny of what constitutes new starts, and my own reaction to this microwave business is that the Bureau of the Budget considered that an essential phase of the operations. Therefore, it came right along with the project "Operation and maintenance" and they did not consider it a new start in the sense that this should be considered to be a new start. It was an improvement of the operating facilities, and, therefore, they doubtless considered it in that light.

I see your point, Mr. Budge.

Mr. BUDGE. You have this item here of $464,080 listed simply as "General plant transmission system," and when we read through your exploratory material in the justifications, it includes a half dozen other projects—that is, a half dozen other different types of work, and it is listed in just six words, "Installation of the project, microwave sys-

tem." That is the only explanation we have and I assumed that that was a relatively small item when I found out it is the entire item. It would be embarrassing to the subcommittee on the floor of the House to have someone ask what that item was and find out that it was not a transmission system in the usual accepted sense of the word, but was a communication system which was to be installed for the first time in the coming fiscal year.

If there are other items of that kind, I think, for the benefit of everyone concerned, that attention of the committee should be invited to them.

Mr. LINEWEAVER. Yes, sir; we will do that.

Mr. JENSEN. If there are any hidden items like this that the committee should be advised about as to their nature and status, we would like to have that information, and I certainly agree with Mr. Budge in his statement.

(The matter referred to follows:)

Major facilities for which initial funds are requested in fiscal year 1954 but which are not shown separately as program items on the budget documents

Project, program item, and facility	Budget reference	Fiscal year 1954 cost program	Status
Eklutna: General property: Acquisition of existing power facilities.	295	$1,726,000	To be acquired in fiscal year 1954.
Davis Dam: General plant transmission system: Microwave communication system.	320	464,080	Minor amount design work in fiscal year 1953; contracts to be awarded, fiscal year 1954.
Colorado-Big Thompson: Permanent improvements.	352		
Construction of sewer and gas line, Loveland Camp.		70,000	Initial contract to be awarded in fiscal year 1954.
Equipment for irrigation operations		210,000	Acquisition to be initiated in fiscal year 1954
Fort Peck: General property: Acquisition of mobile substation.	380	50,000	To be acquired in fiscal year 1954.
Columbia Basin:			
Other multipurpose plant facilities: Slope stabilization and ground cover.	426	225,000	Contract to be awarded, fiscal year 1954.
West Canal irrigation area	426		
Burke watermaster headquarters		32,000	Do.
Isolated ditchrider facilities	426	84,000	Do.
East low canal irrigation area: Isolated ditchrider facilities.	426	83,000	Do.
Potholes irrigation area: Isolated ditchrider facilities.	426	78,000	Do.
Kendrick: General property, power facilities: Telemetering and communication equipment.	448	40,000	Telemetering and communication equipment to be installed, fiscal year 1954.
Missouri River Basin project: Crow Creek unit: General property: Permanent camp facilities.	506	54,000	Contract to be awarded, fiscal year 1954.
Jamestown unit: General property	519		
Fish and wildlife facilities		21,000	Do.
Acquisition of operation and maintenance equipment.		13,000	To be acquired, fiscal year 1954.
Transmission division:			
General property, region 6: Power dispatch station	563	30,000	Contract to be awarded, fiscal year 1954.
General property, region 7: Mobile substations.	564	130,000	Contract to be awarded fiscal year 1953 and completed fiscal year 1954.

Mr. JENSEN. Has any money been appropriated for this microwave system at this time?

Mr. MCPHAIL. I understand, Mr. Chairman, there was a $10,000 item for studies in 1953.

Mr. JENSEN. There has been no money appropriated for construction to date?

Mr. McPHAIL. No, sir.

Mr. BUDGE. But the studies item was never mentioned to this subcommittee, according to what I can find in the hearings.

Mr. McPHAIL. It is my understanding that it was in the justifications some place last year; where it was in the record, I do not know.

Mr. JENSEN. What is the amount you are asking for in this budget for the microwave system?

Mr. McPHAIL. As I understand, $464,080.

Mr. JENSEN. How much will the system cost when completed?

Mr. McPHAIL. Four-hundred and seventy-five thousand dollars.

Mr. JENSEN. I am wondering if that is not one expenditure that we can forego at this time. I have heard no complaint about your communication system down there. The one you are using now seems to be all right. It is all well and good to have these nice handy things, but there is a time when we cannot afford them and I think that time is right now.

Mr. BUDGE. Mr. Chairman, I do not see how that last answer Mr. McPhail gave you can be correct in view of the statement he made a minute ago that the $62,841, less the item for planning, was expended for radio equipment. I assume that the same was true in 1952.

Mr. McPHAIL. That is right, in a sense, Mr. Budge. I do not know how to divide it out. It is a general system of communications which involves both radio and microwave, but it is all for the one purpose of providing the necessary communications and channels of control that are necessary to dispatch the system.

Mr. BUDGE. I wanted to correct your answer to the chairman. You said that the total cost of the microwave system was to be $475,000, and you have already expended roughly $110,000, most of which was for radio equipment that has nothing to do with the microwave.

Mr. McPHAIL. I think you are correct on that.

Mr. LINEWEAVER. We will have that checked, Mr. Budge, by the divisions having responsibility and see if we can uncover any item in this budget that has not been justified heretofore or that is not identified.

CONSTRUCTION AND REHABILITATION

CACHUMA PROJECT, CALIFORNIA

Mr. JENSEN. We turn to the Cachuma project in California, and we will insert in the record at this point pages 15, 16, and 17 of the special data and summary sheets which has been furnished to the committee by the Bureau and pages 324 through 328 of the justification.

(The matter referred to follows:)

CACHUMA PROJECT, CALIFORNIA

Construction

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$19,260,615	$10,953,503	$6,546,782
Unliquidated obligations	2,453,503	−2,453,503	
Total obligations	21,714,118	8,500,000	6,546,782

HISTORY OF PROJECT DEVELOPMENT

Location.—In southern portion of Santa Barbara County. The service area is on the narrow coastal plain between the Santa Ynez Mountains and the Pacific Ocean.

Purpose.—Irrigation and municipal water.

Authorization.—Finding of feasibility which was submitted to the Congress on March 24, 1948.

Initial date.—Planning, 1941; advanced planning, 1949; construction, 1950.

Date of functional completion of construction, fiscal year 1955.

Fiscal year and amount of initial allotment of appropriations for construction, 1949, $1,000,000.

Costs

Original estimated cost	$32,310,000	Present estimated cost	$38,000,000
Allocation of cost:		Allocation of cost:	
Irrigation	20,164,000	Irrigation	22,256,176
Municipal	12,146,000	Municipal	14,710,824
		Unallocated	1,033,000

REPAYMENT

Status of repayment contract negotiations. Water service contract executed with Santa Barbara County Water Agency. Distribution system repayment contracts executed with Goleta District, and approved as to form and awaiting execution with Summerland and Carpinteria Districts.

Amount to be repaid and repayment period:

	Amount	Repayment period		Total (years)
		Regular	Development (years)	
Irrigation	$22,256,176	1954, 2003	4-10	50
Municipal	14,710,824	1954, 2003	0	50

Five million eight hundred thousand dollars cost of irrigation distribution systems will be repaid in full by irrigators in 40 years following 4 to 10 year development periods of particular districts.

Thirty-two million two hundred thousand dollars cost of water supply works used jointly by municipalities and irrigators will be returned in full in an estimated 50-year period by means of water service payments made by the Santa Barbara County Water Agency which has entered into subcontracts with the city of Santa Barbara, and Goleta, Carpinteria, Montecito, and Summerland County Water Districts.

Repayment of costs allocated to irrigation:	
Water users	$22,256,176
Total	22,250,170
Repayment costs per acre:	
Federal investment, per acre	$827
From irrigators	827
Annual water user charges (per acre-foot):	
Construction	4.80
Operation and maintenance	4.80
Water service	25.00
Total	33.55

Gross crop income per acre resulting from project irrigation, $780.00. (Estimated for mature stage of development and includes use of nonproject water.)

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full				12,500
Supplemental			7,000	14,400
Total			7,000	26,900

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$37,675,900
Total obligations to June 30, 1952		21,714,118
Allotment, fiscal year 1953	$4,650,000	
Prior year balance available	3,886,782	
Balance available in subsequent year	−36,782	
Total obligations, fiscal year 1953		8,500,000
Allotment, fiscal year 1954	$6,510,000	
Prior year balance available	36,782	
Total obligations, fiscal year 1954		6,546,782
Balance to complete		915,000

JUSTIFICATION OF ESTIMATE

Authorization.—The Cachuma project was authorized pursuant to a finding of feasibility which was submitted to the Congress on March 24, 1948.

Location.—The project works are all located in southern portion of Santa Barbara County. The service area is on the narrow coastal plain between the Santa Ynez Mountains and the Pacific Ocean.

Description.—The primary purpose of the project is to provide additional amounts of water to maintain existing irrigation, suburban and urban developments, and to permit normal future expansion for the city of Santa Barbara, and the Goleta, Montecito, Summerland, and Carpinteria County Water Districts. Facilities of the project include Cachuma Dam and Reservoir; Tecolote tunnel; South Coast conduit; Glen Anne, Lauro, Ortega, and Carpinteria regulating reservoirs; and distribution systems for Goleta, Carpinteria, and Summerland County Water Districts. The project is designed to furnish a water supply for 26,900 acres and an ultimate minimum of 10,300 acre-feet of water per year to the city of Santa Barbara.

Repayment.—A contract under sections 9 (e) and 9 (c) (2) of the Reclamation Project Act of 1939 has been executed with the Santa Barbara County Water Agency under which the costs of all works except the distribution systems will be returned to the United States. A contract for recovery of costs of construction of the distribution system for the Goleta County Water District under section 2 (d) of the Reclamation Project Act of 1939 has been executed. Contracts for construction of the distribution systems for the Carpinteria and Summerland County Water Districts have been approved as to form and are awaiting local elections and execution.

Status.—Construction began on February 7, 1950. As of June 30, 1953, the project is scheduled to be approximately 82 percent complete. Cachuma Dam and Reservoir, Goleta section of South Coast conduit, Glen Anne and Lauro regulating reservoirs, and the Sheffield tunnel portion of the Carpinteria section of South Coast conduit are scheduled for completion during fiscal year 1953. Work will continue on Tecolote tunnel and Carpinteria section of South Coast conduit. Work is scheduled to commence on Ortega and Carpinteria regulating reservoirs and Goleta distribution system during December 1952. Starting July 31, 1951, water encountered in excavating Tecolote tunnel, amounting to 3 million to 4 million gallons per day, was delivered through the Goleta section of South

Coast conduit to city of Santa Barbara and Montecito County Water District for the relief of a serious water shortage in those areas. During the unusually heavy rains of 1951–52 winter season, storage facilities of these areas were replenished. Starting November 3, 1951, Tecolote tunnel water in excess of that which the city of Santa Barbara and Montecito County Water District could absorb through their existing facilities is being delivered to users in Goleta County Water District in varying quantities as requested and available.

Work proposed, fiscal year 1954.—The program for fiscal year 1954 schedules the completion of Carpinteria section of South Coast conduit, Ortega and Carpinteria regulating reservoirs and the Goleta distribution system. Construction of Tecolote tunnel will be practically completed. The Summerland and Carpinteria distribution systems which are the final phases of the project will be placed under construction with the view of making water available for the entire project area early in fiscal year 1955.

Justification.—There is urgent need for additional water in the Carpinteria, Summerland, and Goleta County Water Districts, embracing some 27,000 acres of irrigable land, of which 10,600 acres are now being irrigated with water pumped from the underground storage basin. The draft on the underground supply is about 9,900 acre-feet per year, whereas the average annual natural replenishment is approximately 6,100 acre-feet. This continuous overpumping is lowering the ground-water level, with definite hazard of salt-water intrusion to the extent that one-third of the irrigated acreage may soon have to revert to a dry-farmed status. The Montecito County Water District, supplied in most part by water from Jamison Lake formed by Juncal Dam on the headwaters of the Santa Ynez River and to a lesser extent by pumping from underground storage, was in a rather desperate situation during the continued drought and the exhaustion of reservoir storage. The situation has been alleviated to some extent by the delivery of water developed in Tecolote tunnel through the recently completed Goleta section of the South Coast conduit and replenishment of Jamison Lake during the unusually heavy rains of 1951–52 winter season, but these sources of supply are far from adequate and water rationing would remain a constant threat during seasons of less than heavy rainfall.

The city of Santa Barbara was until recently almost entirely dependent for its water supply on the yield of Gibraltar Reservoir on the Santa Ynez River. However, the estimated normal safe yield of the reservoir is inadequate for the present population of the city. Due to successive years of practically no runoff, the reservoir storage had become virtually exhausted and resort had been made to pumping from the underground storage basin beneath the city. The yield of the wells is limited and that of some has undergone an alarming decrease. Some relief had been afforded by delivery of water developed in Tecolote tunnel jointly to the city and the Montecito district and by replenishment of reservoir storage during the 1951–52 flood season. Early completion of the construction of the project will relieve these critical conditions.

Furthermore, by the end of the fiscal year 1953, work will be well advanced and a substantial sum will have been invested in project facilities. In order to realize a return on this investment at an early date, the work should proceed as rapidly as economically and practically possible.

The total estimated cost of the Cachuma project has been increased from $34,399,000 to $38,000,000 (anticipated total obligations $37,675,900). This increase is due to changes in tunnel supports for the Tecolote tunnel necessitated by unfavorable geological conditions encountered during excavation, revision of specifications and engineer's estimate for Ortega and Carpinteria regulating reservoirs, additional right-of-way costs to meet proposed settlement of holdings under condemnation for Cachuma Reservoir, increases in the cost of labor and materials, and availability of more accurate estimating data.

Schedule of construction program, fiscal years 1953 and 1954, Cachuma project, California

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Cachuma Dam and Reservoir	$13,488,000	$9,680,633	$3,807,367		
Tecolote tunnel and access road	9,276,033	5,043,276	2,375,945	$1,625,571	$230,468
South Coast conduit:					
Goleta section	2,592,000	2,225,545	366,455		
Carpinteria section	3,346,000	759,647	1,990,721	595,632	
Regulating Reservoir:					
Glen Anne	987,000	406,803	580,197		
Lauro	1,200,000	933,986	266,014		
Ortega	880,000	75,239	304,500	500,261	
Carpinteria	431,000	29,032	208,750	193,218	
Laterals:					
Goleta system	3,600,000	123,851	1,088,000	2,388,149	
Carpinteria system	1,800,000	8,040	76,500	1,117,165	598,325
Summerland system	400,000	2,528	35,150	215,089	147,233
Total cost	38,000,000	19,285,550	11,103,339	6,635,085	976,026
Construction facilities		226,078	−81,091	−83,461	−61,526
Stores		11,842	−7,000	−4,842	
Project investigations		27,157	−27,157		
Operation and maintenance during construction	40,000		20,000	20,000	
Transfers, credits, and other expenditures	−364,100	−290,012	−74,588	−20,000	500
Total expenditures	37,675,900	19,260,615	10,953,503	6,546,782	915,000
Unliquidated obligations		2,453,563	−2,453,503		
Total obligations	37,675,900	21,714,118	8,500,000	6,546,782	915,000
Method of financing:					
Allotment, fiscal year 1953			4,650,000		
Balance available in subsequent year			−36,782		
Prior year balance available			3,886,782	36,782	
Allotments required				6,510,000	915,000

Mr. JENSEN. You are asking for $6,510,000 in this budget for that project?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. Will that amount complete that job?

Mr. MARKWELL. It will practically complete it, Mr. Chairman. I believe there is an amount of about $915,000 which will remain to be spent over a period of time. You may say that, for practical purposes, it will be completed.

Mr. JENSEN. Why do we not put that full amount in and complete the job and be done with it?

I am informed, officially, by representatives of the members of the Cachuma Irrigation District, that they are ready and willing and anxious to have this project turned over to them, lock, stock, and barrel, at the earliest possible moment; and, by so doing, we will not need any personnel out there. There will be no further expenses and expenditures made by the Federal Government, and we will clean up the job and be done with it, so far as the Federal Government is concerned, except to see that the payments are made according to law.

Why leave a little more to do next year when all of this can be done in fiscal 1954? I would like to have that question answered.

Mr. MARKWELL. I think I can answer that, sir. The construction will be pretty well completed toward the end of the fiscal year, but there will remain during the first 4 months of the year some work and some payments to be done on the Tecolote tunnel, the Carpinteria

system, and the Summerland system. I would like to make a brief summary statement.

(The matter referred to follows:)

CONSTRUCTION AND REHABILITATION, CACHUMA PROJECT, CALIFORNIA

This project located in the southern portion of Santa Barbara County, Calif., will provide additional water for existing irrigation, domestic use, and normal future expansion of domestic demand and requirements of several irrigation and water districts. The primary feature of the project is the Cachuma Dam with a reservoir capacity of 210,000 acre-feet. Water releases surplus to prior water rights and needs of the Santa Ynez district will be diverted to the south coast area through the Tecolote tunnel, thence eastward through the Goleta-south conduit (a gravity pipeline) and four regulating reservoirs. Montecito County Water District and Santa Barbara will take delivery of water from the main pipeline and distribute in their own systems, while lateral distribution systems are included in the project for Goleta, Summerland, and Carpinteria County Water Districts. Thus, a water supply for 26,900 acres and a minimum of 10,300 acre-feet per year for the city of Santa Barbara will be provided.

Since construction began early in 1950 over half the project has been completed and by June 1953, will be about 82 percent complete with the scheduled completion of Cachuma Dam and Reservoir, Goleta section of the south coast conduit, Glen Anne and Lauro regulating reservoirs, and the Sheffield tunnel portion of Carpinteria section of south coast conduit. Construction of Ortego and Carpinteria regulating reservoirs and Goleta distribution system was started in December 1952.

Unfavorable geological conditions, found during excavation for the Tecolote tunnel, increased anticipated costs appreciably but resultant water encountered enabled the delivery in July 1951, of several million gallons per day through the Goleta section of south coast conduit to city of Santa Barbara and Montecito County Water District for the relief of a serious water shortage in those areas.

Funds requested for fiscal year 1954 are to complete the Carpinteria section of the south coast conduit, Ortega and Carpinteria regulating reservoirs and Goleta distribution system and continue work on Tecolote tunnel and to initiate construction of the Summerland and Carpinteria distribution systems.

By accomplishment of the fiscal year 1954 construction program the project will be about 97 percent complete and the urgently needed additional water will be provided in the area. Presently the area is dependent upon an underground supply which is being depleted much more rapidly than it it replenished so that the ground water level is continually lowering and threatening to allow salt water intrusion to the extent that a large portion of the presently irrigated acreage would revert to a dry-farm status unless supplemental surface water is supplied at an early date. It is, therefore, urgent that construction of project facilities continue on the present schedule which contemplates delivery of water to the Goleta County Water District in July 1954, and to Summerland and Carpinteria County water districts in October 1954.

Mr. JENSEN. If this project was expedited in fiscal 1954 and rushed to completion, as I am sure it should be, this is one project we can get off our books and unload the full responsibility, except to collect the money from the irrigators and from the city of Santa Barbara, according to the act.

If you can do $6,546,782 worth of work in fiscal 1954, with just a little added effort you can finish the job.

Mr. MARKWELL. Mr. Chairman, I would like very much for the committee to give us an opportunity to attempt it.

Mr. JENSEN. Do that.

Mr. MARKWELL. I surely agree with you that when we are so near the end of a job that it is a nuisance to the committee to have to come up and ask for a very small amount again.

Mr. JENSEN. It is not only a nuisance to the committee, but a waste of money.

Mr. MARKWELL. You are correct, sir. However, as a rule, we have to schedule only for the fiscal year and this appears to be the optimum rate. I should like to try to expedite that if we can finish it by the end of the year.

Mr. JENSEN. How much did you say would be left for fiscal 1955?

Mr. MARKWELL. $915,000, and according to the control schedule, that will be spent in the first 4 months of the year.

Mr. JENSEN. It is just dragging it on. We have had so much experience along that line that I am getting sick and disgusted with it.

Mr. LINEWEAVER. Mr. Chairman, I would, just for the record, like to state that there are items in this $6 million appropriation for which we do not yet have executed repayment contracts. One is for the Summerland County Water District, which was approved as to form August 20, 1952, although it has not as yet been executed. The other one is for $1,800,000 with the Carpinteria County Water District, which was approved, as to form, in October, last year, and has not been executed. We proposed, under the rule, that before we began construction of these 2 facilities covered by these 2 contracts, that the contracts must be, at least, executed.

Mr. JENSEN. You will have those contracts executed before the end of this fiscal year, by next July 1, will you not?

Mr. LINEWEAVER. I certainly hope so, but I just wanted to make that statement for the record.

Mr. JENSEN. Should the committee appropriate $915,000, in addition to what you have requested for 1954, making a total of $7,461,782, would you say at this moment that that amount of money would complete the job?

Mr. MARKWELL. Insofar as we can tell at the present time. However, we are in a very difficult tunnel situation on the Tecolote tunnel. If it is appropriated, I will make this statement at this time and point out to the committee, in summary, that there has been an increase in the cost of the project that the committee should be aware of.

Mr. JENSEN. I know that; the justifications show that.

Mr. MARKWELL. It is primarily due to this Tecolote tunnel.

Mr. JENSEN. Are there additional increases that have come to your attention since your budget estimate for 1954 was sent to the Bureau of the Budget?

Mr. MARKWELL. No, sir. That is not to say that the contract is not running into some additional difficulties, but we have not found it necessary to increase the total estimated cost.

Mr. JENSEN. I wish this committee could be assured that that amount of $7,461,782 would complete that project, because I am sure, if we had that assurance, we would appropriate that amount and then in the report, we would say that we are in this bill appropriating that amount to complete the Cachuma project and that there will be no further appropriations made by Congress for that project. That would be the business way of doing it.

Mr. MARKWELL. I would like to assure you, Mr. Chairman, that that will be the aim and the ambition of the Bureau to accomplish that, providing it can be done without adding costs or needless expense for expediting it.

Mr. JENSEN. That is the problem we have to face all the time, and that is the uncertainty in all of these projects. I recognize that, but we are simply not getting these jobs completed and out of the way.

I think we have only actually completed one project and that is the Yakima, Wash., project, since I have been on this committee in 11 years. If there have been some others, I would like to know about it, where you are not asking this Congress to appropriate any money whatever for anything pertaining to these projects.

Mr. MARKWELL. I would like to submit a table for the record on that, Mr. Chairman.

Mr. JENSEN. I certainly hope you will. Those which have been absolutely completed and for which you are not now asking further appropriations for any phase, or any part of the project, whether it be for operation, maintenance, rehabilitation or betterment, or anything else.

Mr. MARKWELL. Very well, sir.

(The information requested follows:)

PROJECTS COMPLETE OR FUNCTIONALLY COMPLETE AS OF JUNE 30, 1953

The following table lists projects and separable portions of projects completed by the Bureau of Reclamation for which no funds are being requested after fiscal year 1953 (column 2). In addition the list includes projects or separable portions of projects which will be functionally completed as of June 30, 1953, but for which funds are to be requested for operation and maintenance, rehabilitation or drainage, and minor completion work.

State and project	No additional funds required (X)	Funds required after fiscal year 1953		
		Operation and maintenance [1]	Rehabilitation and betterment	Drainage and minor completion work
(1)	(2)	(3)	(4)	(5)
Arizona: Salt River			$2,265,000	
Arizona and California:				
Parker Dam Power		[2] $2,254,400		
Yuma		[3] 201,000		
Yuma auxiliary				
California: Orland	X	(4)		
Colorado:				
Fruitgrowers Dam	X			
Grand Valley	X			
Mancos		(4)		$50,000
Pine River		(4)		50,000
Uncompahgre (Gunnison)	X			
Idaho:				
Boise:				
Anderson Ranch Dam		[3] [5] 558,260		
Arrowrock division				
Drainage				44,048
Payette			785,000	104,374
Lewiston Orchards	X			
Preston Bench	X			
Rathdrum Prairie:				
Post Falls	X	(4)		
Hayden Lake	X			
Idaho and Wyoming:				
Minidoka:				
Gooding division		[3] [6] 361,000		80,040
North side gravity division				
South side pumping division				
Upper Snake division				
Montana:				
Bitter Root			41,000	
Buffalo Rapids:				
First division				361,283
Second division				350,002
Frenchtown	X			
Huntley	X			
Intake	X			
Milk River: Fresno Dam		[7] 1,000		153,275
Milk River (original)			326,000	
Missoula Valley: Big Flat	X	(4)		
Sun River:				
Fort Shaw division	X			
Greenfields division		(4)		79,715

See footnotes at end of table.

State and project	No additional funds required (X)	Funds required after fiscal year 1953		
		Operation and maintenance [1]	Rehabilitation and betterment	Drainage and minor completion work
(1)	(2)	(3)	(4)	(5)
Montana and North Dakota: Lower Yellowstone (Fort Buford)	X			
Nebraska: Mirage Flats				$60,000
Nebraska and Wyoming: North Platte		[2] $220,200	$6,041,649	
Nevada:				
Humboldt	X			
Newlands (Truckee Carson)	X			
Nevada and California: Truckee River storage	X			
New Mexico:				
Carlsbad		3,000		
Fort Sumner	X			
Tucumcari				606,600
New Mexico and Texas: Rio Grande (irrigation)	X	[4]		
North Dakota: Buford, Trenton	X			
Oklahoma: W. C. Austin		2,060		
Oregon:				
Arnold	X			
Baker	X			
Burnt River	X			
Deschutes, north unit		[3] 201,500		762,726
Grants Pass	X			
Ochoco	X			
Umatilla		[4]	25,000	
Vale	X	[4]		
Oregon and Idaho: Owyhee	X	[4]		
South Dakota:				
Belle Fourche			254,000	
Rapid Valley, Deerfield	X	[4]		
Texas:				
Balmorhea	X			
Colorado River (Texas)	X			
Utah:				
Hyrum	X			
Moon Lake	X			
Newton	X			
Ogden River	X			
Sanpete	X			
Scofield	X			
Strawberry Valley	X			
Weber River	X			
Washington:				
Okanogan			29,000	
Yakima:				
Kittitas				
Storage		[3] [5] 550,000		
Sunnyside				
Tieton				
Wyoming: Shoshone		[3] 183,200	125,000	1,931,087
Various, Missouri River Basin project:				
Angostura		[3] 30,500		613,000
Boysen		117,500		602,000
Dickinson		[3] 4,000		368,195
Fort Clark		[3] 5,212		20,260
Keyhole		[3] 6,000		114,000
Kortes	X	147,000		
Savage				26,300

[1] Fiscal year 1954 appropriation only as operation and maintenance is a continuing activity.
[2] Appropriation for combined Parker-Davis project.
[3] Includes irrigation facilities.
[4] Operated by Reclamation with water users' advances.
[5] Appropriation for entire Boise project.
[6] Appropriation for entire Minidoka project.
[7] Appropriation for entire Milk River project.
[8] Appropriation for entire Yakima project.

Mr. JENSEN. Some water is already being furnished the irrigators out of the tunnel proper?

Mr. MARKWELL. That is correct.

Mr. JENSEN. That is, after you got the tunnel built, the natural drainage into the tunnel was furnishing a lot of water?

Mr. MARKWELL. That is correct.

Mr. JENSEN. And that water is now in use?

Mr. MARKWELL. Yes, sir.

Mr. JENSEN. When do you propose to turn the water from the reservoir into the tunnel?

Mr. MARKWELL. On the present schedule, November 1954.

Mr. JENSEN. After the water from the reservoir is turned into the tunnel, what then is left to be done so far as construction is concerned?

Mr. MARKWELL. The completion of the Carpinteria laterals and the Summerland laterals, to which Mr. Lineweaver referred a moment ago as not having yet signed their repayment contracts, even though we are covered by the blanket repayment contract of the water district.

Mr. JENSEN. Of course, we all know that laterals can be built in a very short time. That is a very simple construction job.

After the laterals are built, then what remains to be done?

Mr. MARKWELL. In 1955, we have scheduled the only remaining work on the Tecolote tunnel and the two laterals systems to which you referred.

Mr. FENTON. How can you complete a contract before these elections in Carpinteria and Summerland?

Mr. LINEWEAVER. Those two contracts were approved as to form, Dr. Fenton, and they are yet to be executed by the two districts, the Carpinteria and the Summerland districts. We do not anticipate any difficulty about them.

(A statement on status of Cachuma project repayment may be found on p. 1195.)

Mr. FENTON. That is, if you have no more trouble like you had in that other area in Coachella.

Is that Sheffield Tunnel complete at Santa Barbara? That is in the city of Santa Barbara, is it not?

Mr. MARKWELL. Yes, sir; that is correct, it is within the city. I do not have that broken down into separate items.

Mr. MCPHAIL. Sheffield is scheduled for completion this year. It is a 1953 item and will be finished by the end of the fiscal year. It is under construction right now.

Mr. JENSEN. How long is that Tecolote tunnel? Are you running into some particular trouble there?

Mr. MARKWELL. Yes, sir, particularly in the outlet end. The tunnel is 6 miles long.

Mr. FENTON. Has that difficulty been eliminated, or is it very serious?

Mr. MARKWELL. It was very serious, Dr. Fenton, but we now think we have the situation under control. At the outlet end of the tunnel, we drove inward and while we expected a great deal of water, we got much more than we expected, so much so that ordinary grouting operations to seal off the water would not take effect. We had to drive drainage drifts on each side of the tunnel to intercept the water in order to drive the main tunnel past the wet section. We do now have it under control and the contractor is making good progress, but there was a delay and it did cost more money. However, oddly enough, it also supplied the water users with some badly needed water. So, it was not all bad; there was some benefit from it, to the extent of several million gallons of water a day.

Mr. FENTON. I would imagine that is one of the things that is holding you up in completing the project this year?

Mr. MARKWELL. Yes, sir.

Mr. FENTON. In an 11- or 12-mile tunnel, you are likely to have all kinds of trouble.

Mr. BUDGE. Mr. Chairman, could I return to a matter which we have discussed for one question?

Mr. JENSEN. Yes, sir.

OPERATION AND MAINTENANCE

COLORADO RIVER FRONT WORK AND LEVEE SYSTEM PROJECT, ARIZONA-CALIFORNIA-NEVADA

LEGISLATIVE AUTHORITY

Mr. BUDGE. Mr. Lineweaver, I was looking at the authorization for the Colorado River front work on which you are requesting $1,425,000 for operation and maintenance for fiscal 1954 and I am unable to find any legislative authorization for that appropriation. Where does the authorization appear?

Mr. LINEWEAVER. The act of June 28, 1946, 60 Stat. 338, and August 14, 1946, 60 Stat. 1080, Public Law 732, 79th Congress, 2d session.

Mr. BUDGE. One of those, at least, as I look at it very quickly, would appear to be an annual appropriation which expired and on which there is a limitation.

Mr. LINEWEAVER. Which one are you referring to? The one of June 28, 1946?

Mr. BUDGE. That one was June 30, 1946. I have June 28 before me here, and it may be that there was no limitation in that one.

Mr. LINEWEAVER. I will look into it.

Mr. BUDGE. Would you recheck that authorization for us?

Mr. LINEWEAVER. Yes, sir, I certainly will. I will put the full authorization in the record, which is the act of June 28, 1946, as follows:

[PUBLIC LAW 469—79TH CONGRESS]

[CHAPTER 517—2D SESSION]

[H. R. 5674]

AN ACT To amend the laws authorizing the performance of necessary protection work between the Yuma project and Boulder Dam by the Bureau of Reclamation

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the provision of the Act entitled "An Act authorizing the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes", approved January 21, 1927 (44 Stat. 1010, 1021), amended by the Act entitled "An Act to authorize defraying cost of necessary work between the Yuma project and Boulder Dam", approved July 1, 1940 (54 Stat. 708), is hereby further amended to read as follows:

"That for the purpose of controlling the floods, improving navigation, and regulating the flow of the Colorado River, there is hereby authorized to be appropriated, out of any moneys in the Treasury of the United States not otherwise appropriated, for the fiscal year ending June 30, 1928, and annually thereafter, such sums as may be necessary, to be spent by the Bureau of Reclamation under the direction of the Secretary of the Interior, to defray the cost of (a) operating and maintaining the Colorado River front work and levee system in Arizona, Nevada, and California; (b) constructing, improving, extending, operating, and maintaining protection and drainage works and systems along the Colorado River; (c) controlling said river, and improving, modifying, straightening, and rectifying the channel thereof; and (d) conducting investigations and studies in connection

therewith: *Provided*, That the expenditure of moneys for any of the foregoing purposes shall not be deemed a recognition of any obligation or liability whatsoever on the part of the United States: *Provided further*, That, within the discretion of the Secretary of the Interior, local communities to be benefited by works constructed pursuant to this Act may be required to provide, without cost to the United States, necessary rights of-way and maintenance of the completed works and assurance, satisfactory to him, of payment of valid claims arising out of damage caused to persons or property by reason of the construction, operation, or maintenance of any such works: *Provided further*, That any moneys received by the United States as reimbursement in accordance with contracts heretofore entered into under the authority of the Act of December 21, 1928 (45 Stat. 1057), as amended, and ratified by the Act of August 30, 1935 (49 Stat. 1028, 1039), for expenditures made under the authority of this paragraph, shall be covered into the Treasury as miscellaneous receipts. In connection with operations conducted under this paragraph, the Secretary of the Interior shall have the same authority with respect to (a) the acquisition, exchange, and disposition of lands, interests in lands, water rights and other property, and the relocation thereof; (b) the utilization of lands owned or acquired by the United States; (c) construction and supply contracts; (d) the performance of necessary or proper acts; and (e) the making of necessary or proper rules and regulations, which he has in connection with projects under the Federal reclamation laws, Act of June 17, 1902 (32 Stat. 388), and Acts amendatory thereof or supplementary thereto. Nothing contained in this paragraph shall be deemed to amend, repeal, or otherwise affect the provisions contained in the First Deficiency Appropriation Act, 1944, under the caption 'Department of the Interior, Bureau of Reclamation—Colorado River front work and levee system' (58 Stat. 150, 157)."

Approved June 28, 1946.

Construction and Rehabilitation and Operation and Maintenance

Central Valley Project, California

Mr. Jensen. We now come to the Central Valley project in California. We will insert in the record at this point pages 18 through 22 of the data contained on the summary sheets which has been furnished to the committee by the Bureau of Reclamation, pages 330–336 and pages 101–106 of the justification.

(The matter referred to follows:)

Central Valley Project, California

Construction

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$374,256,784	[1] $29,303,781	[2] $35,514,202
Unliquidated obligations	9,247,254	−3,842,397	−3,605,815
Total obligations	383,504,038	[1] 25,461,384	[2] 31,908,387

[1] Includes $54,333 general investigations funds for Trinity River division not shown in justifications for appropriations, fiscal year 1954.

[2] Includes $256,600 general investigations funds for Trinity River division not shown in justifications for appropriations, fiscal year 1954.

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$2,391,457	$3,382,431	$4,608,413
Unliquidated obligations	32,681	−32,681	
Total obligations	2,424,138	3,349,750	4,608,413
Funds in excess of needs	4,246		
Appropriation or estimate	2,428,384	3,349,750	4,608,413

HISTORY OF PROJECT DEVELOPMENT

Location.—The Central Valley in California consists of the Sacramento and San Joaquin River Valleys extending from Mount Shasta in the north to the Tehachapi Mountains on the south. Its watershed covers the area from the Sierra Nevada Range to the delta outlet through San Francisco Bay. The valley area contains 19 of the 58 counties of the State which comprise 27 percent of the land area.

Purpose.—Irrigation, power, flood control, and navigation, including the redistribution of the water resources of the Central Valley since the northern portion, drained by the Sacramento River, contains approximately one-third of the land area and has two-thirds of the available water. The southern portion of the valley drained by the San Joaquin River has the reverse situation.

Authorization.—By the President on September 10, 1935, under the provisions of the Emergency Relief Appropriation Act, 1935 (49 Stat. 115).

Reauthorization.—By a finding of feasibility by the Secretary of the Interior dated November 26, 1939, approved by the President under the provisions of the Reclamation Act of December 5, 1924 (43 Stat. 701). Additional authorizations were made by the Rivers and Harbors Acts of August 26, 1937 (50 Stat. 844, 850), and October 17, 1940 (54 Stat. 1198, 1199). Added American River features were authorized under the act of October 14, 1949 (63 Stat. 852), and the Sacramento Valley canals authorized under the act of September 26, 1950 (64 Stat. 1036).

Initial date.—Planning: The Bureau has participated in studies for development in the Central Valley almost from the beginning of the Reclamation Service in 1902. The "State water plan" was issued by the State of California in 1930.

Advanced Planning: 1935.

Construction: 1935.

Date of functional completion of construction	*Fiscal year*
Contra Costa distribution system	1957
Delta-Mendota distribution system	1954
Fraint-Kern distribution system	1956
Madera distribution system	1954
Sacramento canals unit	1960
Transmission lines additions, after	1960
Trinity River division	1959

Fiscal year and amount of initial allotment of appropriations for construction 1936, $6,900,000.

Costs

Original estimated cost	$170,000,000
Allocation of cost, unallocated	170,000,000
Present estimated cost $654,248,287:	
Allocation of cost:	
Irrigation	[1] 316,270,287
Power	218,007,000
Flood control	61,744,000
Navigation	18,083,000
Municipal	11,038,000
Future use	29,106,000

[1] Consists of water supply works, $242,615,000; distribution systems, $73,655,287.

REPAYMENT

Status of repayment contract negotiations.—As of the commencement of fiscal year 1953, long-term water service contracts for Central Valley project water had been executed with 19 districts, and contracts negotiations are in various stages of completion with an additional 23 other districts. Amendatory contracts have been executed by 3 districts increasing the maximum contract liability under which the United States is constructing a distribution system. Six other contracts are in the process of negotiation.

Amount to be repaid and repayment period.—Construction costs ($218,007,000) allocated to commercial power will be repaid within 50 years of date individual facility becomes revenue producing. Payout is scheduled for completion by the year 2000.

Construction cost of irrigation distribution systems ($73,655,287) will be repaid within 40 years (plus 1 to 10 year development period) after completion of construction of individual systems.

Construction cost of irrigation water supply works ($242,615,000) will be paid in full by 2005.

Return of construction cost allocated to municipal water ($11,038,000) is scheduled for completion by 1980.

Construction costs ($29,106,000) of capacities of reservoirs and canals for future use will be repaid from water sales in connection with proposed extensions of the project or, if such extensions are not built, will be returned from surplus revenues of currently contemplated water and power sales.

Repayment of costs allocated to irrigation:

	Total
Water users:	
Water supply works	$135,845,600
Distribution systems	73,655,287
	209,500,887
Power: Interest component	81,735,100
Municipal:	
Direct	20,553,700
Interest component	4,480,600
	25,034,300
Total	316,270,287

Repayment costs per acre

Federal investment per acre	$302.00
From municipal	24.00
From power revenue	78.00
From irrigators	200.00
Annual water user charges:[1]	
Water service (includes O. and M. and construction):	
Class I (firm supply), per acre-foot	3.50
Class II, per acre-foot	1.50
Gross crop income per acre resulting from project irrigation (actual for current year 1951, includes nonprofit water)	265.00

[1] In addition water users will bear costs of building and operating lateral distribution systems.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full	9,300	12,300	15,150	237,419
Supplemental	533,150	548,422	572,672	810,123
Total	542,450	560,722	587,822	1,047,542
Power (kilowatts)	454,000	454,000	454,000	979,500
Average power rates (mills per kilowatt-hour):				
Firm	5.1	5.1	5.1	5.1
Nonfirm	3.3	3.3	3.3	3.3

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Irrigation facilities:			
Actual June 30, 1952	143		
1953	155		
1954	210		
Power facilities:			
Actual June 30, 1952	153	6	
1953	174	10	
1954	189	55	
Joint facilities:			
Actual June 30, 1952	122		
1953	146		
1954	146		
District headquarters charges:			
Actual June 30, 1952			49.0
1953			47.0
1954			47.0
Denver office:			
Actual June 30, 1952			
1953			.5
1954			4.2
Regional CPA services:			
Actual June 30, 1952			27.0
1953			27.0
1954			22.0
Total:			
Actual June 30, 1952	418	6	76.0
1953	475	10	74.5
1954	545	55	73.2

Other project statistics, see p. BR-106.

PROPOSED NEW ADDITIONS

The ultimate plan for Central Valley, part of which is now under preliminary investigation, contemplates the addition of a number of new divisions for full development of the water resources of the area.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$649,324,134
Total obligations to June 30, 1952		383,504,038
Allotment, fiscal year 1953	$32,327,642	
Prior year balance available	4,850,796	
Balance available in subsequent years	−11,771,387	
Total obligations, fiscal year 1953		25,407,051
Allotment, fiscal year 1954 (construction)	$19,250,000	
Allotment, fiscal year 1954 (general investigations funds)	631,000	
Prior year balance available	11,771,387	
Total obligations, fiscal year 1954		31,652,387
Balance to complete		208,760,658

JUSTIFICATION OF ESTIMATE

Authorization

The Central Valley project was initially authorized by the President on September 10, 1935, under the provisions of the Emergency Relief Appropriation Act, 1935 (49 Stat. 115). The project was subsequently authorized by a finding of feasibility by the Secretary of the Interior dated November 26, 1939, approved by the President under the provisions of the Reclamation Act of December 5,

1924 (43 Stat. 701). Additional authorizations were made by the Rivers and Harbors Acts of August 26, 1937 (50 Stat. 844, 850), and October 17, 1940, (54 Stat. 1198, 1199). Added American River features were authorized under the act of October 14, 1949 (63 Stat. 852), and the Sacramento Valley canals authorized under the act of September 26, 1950 (64 Stat. 1036).

Location

The Central Valley consists of the Sacramento and San Joaquin River Valleys in California. The valley is approximately 500 miles long and 100 miles wide extending from Mount Shasta in the north to the Tehachapi Mountains on the south. Its watershed covers the area from the Sierra Nevada Range to the delta outlet through San Francisco Bay. The valley area contains 19 of the 58 counties of the State which comprise 27 percent of the land area. On the basis of the 1950 census, the valley contains 20 percent of the State's population. Most recent data available credit the Central Valley with 21 percent of the assessed value and 52 percent of the cash farm income.

Description

The plan of the project is to redistribute the water resources of the Central Valley since the northern portion, drained by the Sacramento River, contains approximately one-third of the land area and has two-thirds of the available water. The southern portion of the valley drained by the San Joaquin River has the reverse situation.

Shasta Dam provides water in storage in the north which under controlled releases flows down the Sacramento River. Near the confluence of the Sacramento and San Joaquin Rivers, the water is diverted through the Delta Cross Channel to the Tracy pumping plant. At the pumping plant the water is raised approximately 200 feet into the Delta-Mendota Canal in which it flows southerly a distance of 120 miles. This new supply of water from the north permits, by exchange, such water as is available in the San Joaquin River to be diverted into the southern part of the San Joaquin Valley. To achieve this, Friant Dam on the upper San Joaquin impounds the water in Millerton Lake and via the Friant-Kern Canal this water is delivered 153 miles to the water-deficient areas of the southern extreme of San Joaquin Valley.

The development of the American River Basin was authorized as part of the project by Public Law 356 to be coordinated and integrated as part of Central Valley project. The features of the American River—the major tributary of the Sacramento River—include Folsom Dam, under construction by the Corps of Engineers; Folsom and Nimbus powerplants, as well as necessary canals and transmission lines to be constructed by the Bureau.

Repayment

As of the commencement of fiscal year 1953, long-term water service contracts for Central Valley project water had been executed with 19 districts, and contract negotiations were in various stages of completion with an additional 23 other districts. Amendatory contracts have been executed by three districts increasing the maximum contract liability under which the United States is constructing a distribution system. Six other contracts are in the process of negotiation.

Effective August 27, 1951, a wheeling contract between the Bureau and a private utility company (P. G. & E.) covering electrical-power transmission became operative. On that date the Bureau commenced service to the first preference customer and to Federal installations by the conveyance of Bureau power over the transmission lines of the private utility company. It is estimated that in fiscal year 1954 over one-half billion kilowatt-hours of energy will be transmitted over private utility lines with an estimated cost to the Bureau for such transmission of almost $1 million.

Status

Construction was initiated under the Emergency Relief Appropriation Act of 1935 (40 Stat. 115). As of June 30, 1953, the project will, on an obligation basis, be approximately 60 percent complete. While fiscal year 1952 witnessed a valleywide observance (August 1951) as a result of placing in operation all the initial features of the project, a significant construction program is currently under way. The largest single item in the curren program is the continuation of construction of Folsom Dam by the Corps of Engineers. Other major work is the further construction of distribution systems for various irrigation districts. Another major feature in programed amount is construction of Sly Park Dam

and canals. Other items under construction include the general completion of turnouts and wasteways for Friant-Kern and Delta-Mendota canals; the continuation of construction of the West Side road at Shasta Reservoir; the final completion of the Tracy pumping plant and the West Side line; the continuation of the determination of water rights along the Sacramento and San Joaquin Rivers; erection of towers on Folsom-Elverta 230-kilovolt transmission line, and final completion of Tracy switchyard.

Work proposed, fiscal year 1954

Fiscal year 1954 will be a peak year in the construction of the Folsom power facilities and the Folsom transmission facilities. The program provides for the installation of the generators, the completion of the 230-kilovolt transmission line, and the general completion of Nimbus Dam, power plant, and appurtenant works. Ranking second to this major item is the continuation of distribution system construction for the various irrigation districts. This year will also be a peak year in the construction of Sly Park Dam and conduits with a program embracing major construction of Sly Park Dam, Saddle Dam, and reservoirs, tunnel, and conduit, as well as a continuation of the final design of the permanent delta fish protection facilities. The program also calls for the completion of the west side road at Shasta Reservoir. Other items in the program are turnouts and wasteways along the Friant-Kern and Delta-Mendota Canals.

Justification

Because of the unprecedented increase in California's population, an increase of 53 percent in 10 years, together with the increased demands for agricultural, livestock, and power production to meet national-defense requirements, the demands for water and power are far ahead of the development of a firm supply of these two resources. The program for fiscal year 1954 is directed toward the completion of such facilities and features as will help to alleviate this demand. Construction of the distribution systems and the transmission facilities should be continued at an economical rate to make available as soon as possible full and efficient utilization of completed works which represent a substantial investment on the part of the Government.

The total estimated cost of Central Valley project has been decreased from $668,282,419 to $654,248,287 (estimated total obligations $649,324,134). This decrease is due to refinements of estimates as features reached completion, decrease of the estimated costs of Friant-Kern distribution system as a result of the elimination of Tulare, Shafter-Wasco, and Arvin-Edison distribution systems, and the deletion from the Central Valley project plan of the Keswick SDAPUD transmission line and substation, and the westside I. D. transmission line and substation.

Schedule of construction program, fiscal years 1953 and 1954, Central Valley project, California

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Central Valley project, excluding distribution systems	($594,741,287)	($353,636,897)	($20,192,535)	($23,674,881)	($197,236,974)
Shasta Dam and Reservoir, 4,500,000 acre feet	115,975,900	114,497,556	540,804	532,000	405,548
Keswick Dam, 24,000 acre-feet	11,916,000	11,368,256	231,448	146,000	170,208
Friant Dam and Reservoir, 520,000 acre feet	22,007,000	21,892,219	29,296	85,485	
Folsom Dam and Reservoir, 1,000,000 acre feet	(53,696,000)				
Sly Park Dam and conduits, 41,000 acre feet	7,303,000	429,122	1,130,000	3,032,737	2,711,141
Water rights (Sacramento and San Joaquin Rivers)	9,233,000	7,068,827	762,194	581,843	820,136
Tracy pumping plant and intake canal, 135,000 horsepower	16,500,000	16,328,010	171,990		
Delta fish protection facilities	4,500,000	448,322	282,400	200,000	3,569,278
Contra Costa Canal system, 350 cubic feet per second, 48 miles	7,000,000	6,677,341	100,000	112,000	110,659
Madera Canal, 1,000 cubic feet per second, 36 miles	3,025,000	2,753,888	108,412	75,900	86,800
Friant-Kern Canal, 4,500 cubic feet per second, 153 miles	59,693,000	57,650,592	1,030,108	810,800	201,500
Delta Cross Channel, 7,600 cubic feet per second, 50 miles	11,839,000	2,130,730	123,700	90,000	9,494,570
Delta-Mendota Canal, 4,600 cubic feet per second, 117 miles	45,980,000	14,522,567	872,402	585,031	
Sacramento canals unit, approximately 200,000 acres, 166 miles	52,179,000	630,184	439,100	631,000	50,478,716
Delta steam plant and switchyard, 330,000 kilowatts	55,969,000	68,095			55,900,905
Shasta power plant and switchyard, 379,000 kilowatts	24,166,000	23,793,098	76,523	229,127	67,252
Keswick power plant and switchyard, 75,000 kilowatts	11,390,000	11,301,007	35,993	53,000	
Folsom power facilities, 175,500 kilowatts	43,162,000	4,485,163	11,366,841	14,961,327	12,348,669
Sacramento canals unit power plant, switchyard, and telephone lines, 24,000 kilowatts	11,494,000				11,494,000
Tracy switchyard, 245,000 kilovolt-amperes	7,450,000	6,447,058	476,397	70,000	456,545
Sacramento area, telephone lines and substations, 445,000 kilovolt-amperes	11,043,000	53,169			10,989,831
Shasta-Tracy east side No. 3, 230-kilovolt, 230 miles	6,249,272	6,200,178	21,326		27,768
Shasta-Tracy west side, Nos. 1 and 2, 230-kilovolt, 222 miles	11,117,715	10,932,774	125,592		59,349
Folsom transmission facilities, 230-kilovolt, 20 miles	1,880,000	261,314	962,000	656,686	
Central Valley project-Bonneville Power Administration, interconnection, 230-kilovolt, 120 miles	5,900,000				5,900,000
Tracy-Contra Costa-Clayton-Ygnacio and substations, 69-kilovolt, 41 miles	890,000	751,558	4,970	60,000	73,472

Schedule of construction program, fiscal years 1953 and 1954, Central Valley project, California—Continued

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Central Valley project, excluding distribution system—Con					
Preference customer-metering facilities	$470,000	$18,881	$150,110	$220,119	$80,890
Transmission lines additions	30,412,000				30,412,000
Central Valley radio network	385,000	305,665	39,935	37,600	1,800
General property	5,612,400	2,621,323	1,110,994	504,226	1,375,857
Distribution systems	(59,507,000)	(16,134,404)	(9,535,598)	(12,660,756)	(21,176,242)
Contra Costa distribution systems	6,071,000	101,264	540,000	296,736	5,133,000
Delta-Mendota distribution systems	3,685,000	9,661	155,500	672,839	2,847,000
Friant-Kern distribution systems	41,431,000	15,284,468	5,597,665	7,352,625	13,196,242
Madera distribution system	8,320,000	739,011	3,242,433	4,338,556	
Total cost	654,248,287	369,771,301	29,728,133	36,335,637	218,413,216
Construction facilities		3,194,079	−637,011	−734,803	−1,822,265
Stores		1,203,407	−77,530	−436,777	−689,100
Project investigations	1,084,324	1,412,050	123,131	70,000	−520,857
Operation and maintenance during construction	2,938,885	2,772,394	99,640	24,145	42,706
Transfers, credits, and other expenditures	−8,947,362	−4,096,447	13,085		−4,864,000
Total expenditures	649,324,134	374,256,784	29,249,448	35,258,202	210,559,700
Unliquidated obligations		9,247,254	−3,842,397	−3,605,815	−1,799,042
Total obligations	649,324,134	383,504,038	25,407,051	31,652,387	208,760,658
Method of financing:					
Allotment, fiscal year 1953			32,327,642		
Prior-year balance available			4,850,796	11,771,387	
Balance available in subsequent year			−11,771,387		
Allotments required:					
Construction and rehabilitation				19,250,000	208,760,600
General investigations				631,000	

Operation and Maintenance

Summarized financial data

Total, fiscal year 1952	$2,424,138
Allotment, fiscal year 1953	3,349,750
Total obligations, 1953	3,349,750
Allotment, fiscal year 1954	4,608,413
Total obligations, 1954	4,608,413

Justification of Estimate

Location

The Central Valley consists of the Sacramento and San Joaquin River Valleys in California. The valley is approximately 500 miles long and 100 miles wide extending from Mount Shasta in the north to the Tehachapi Mountains in the south. It contains 19 of the 58 counties in the State and comprises approximately 27 percent of the land area.

General conditions

The first full operation of the initial features of the project was observed in August 1951; and when this multipurpose project is in full operation it will provide water for the irrigation (excluding irrigation available from American River development) of approximately 488,000 acres of new irrigable land and a

supplemental supply for approximately 759,000 acres of presently irrigated land having an inadequate supply; generate approximately 2,600,000,000 kilowatt-hour of power annually, measured at load centers, for the operation of project pumping plants and for commercial sale; provide water for industrial and municipal purposes; provide flood control on the Sacramento and San Joaquin Rivers at Shasta and Friant Dams, respectively; provide for navigation on the Sacramento River to Chico Landing; provide salinity control in the Sacramento-San Joaquin Delta; and afford opportunities for recreation at Shasta Lake and at Millerton Lake, the reservoir created by Friant Dam.

As of the commencement of fiscal year 1953, long-term water-service contracts for Central Valley project water had been executed with 19 districts, and contract negotiations are in various stages of completion with an additional 23 other districts. Amendatory contracts have been executed by 3 districts, increasing the maximum contract liability under which the United States is constructing a distribution system. Six other contracts are in the process of negotiation.

Effective August 27, 1951, a wheeling contract between the Bureau and a private utility company (P. G. & E.) covering electric-power transmission became operative. On that date the Bureau commenced service to the first preference customer and to Federal installations by the conveyance of Bureau power over the transmission lines of the private utility company.

Increased project revenues result from the placing into operation of additional features. It is anticipated that the collection from water sales in fiscal year 1954 will be $4 million, an increase of 70 percent over anticipated fiscal year 1953 water sales, and it is anticipated that the total revenue from the sale of project water at the conclusion of fiscal year 1954 (including prior years) will be over $11 million. Power revenue is estimated at $9,300,000 in fiscal year 1954; and at the end of fiscal year 1954 it is estimated that the total cumulative power revenues will be nearing the $70 million mark. An estimated grand total for cumulative power and water revenues at the end of fiscal year 1954 would be in the neighborhood of $80 million.

Work proposed, 1954

	Program, 1954	Increase (+) or decrease (−) from 1953
MULTIPURPOSE FACILITIES		
Storage system: For the continued operation of Shasta and Friant Reservoirs	$479,324	−$41,467
Carriage system: For the normal operation and maintenance of Sacramento and San Joaquin Rivers, Delta cross channel, Tracy pumping plant, Contra Costa Canal system, Delta-Mendota Canal, and water deliveries to utility districts in Shasta Dam area. Increase is due to first full year of operation of Tracy pumping plant	1,046,427	+22,530
Total obligations, multipurpose facilities	1,525,751	−18,937
IRRIGATION FACILITIES		
Carriage system: For the normal operation and maintenance of Madera and Friant-Kern Canals. Increase due primarily to delayed maintenance on Friant-Kern and Madera Canals	502,772	+172,593
Replacements and improvements: For purchase of trucks and vehicles	26,400	+21,400
Total obligations, irrigation	529,172	+193,993
POWER FACILITIES		
Electric generation: For the normal operation and maintenance of Shasta and Keswick powerplants. Increase due to additional cost of maintenance and wage-board increase	829,185	+81,556
Transmission and distribution expense: For the normal operation and maintenance of 543 line-miles. Increase predominately due to cost of transmission of Bureau power over private utility lines. (Wheeling up $525,370.) Other increase is due primarily to wage-board increases	1,235,005	+580,485
Replacements and improvements: For labor and materials in connection with rewinding generator No. 5 in Shasta powerplant, replacement of wood poles with steel towers on Shasta-Tracy (east side) transmission line and purchase of vehicles. Increase is due to rewinding of generator and acceleration of rate of replacing wood poles to overcome lag in this work	489,300	+421,566
Total obligations, power	2,553,490	+1,083,607
Total obligations, all facilities	4,608,413	+1,258,663

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item (1)	Total, prior year 1952 (2)	Program, current year 1953 (3)	Program, budget year 1954 (4)
MULTIPURPOSE FACILITIES			
Operation and maintenance:			
Storage system	$578,411	$520,791	$479,324
Carriage system	433,980	1,023,897	1,046,427
Total obligations, multipurpose facilities	1,012,391	1,544,688	1,525,751
IRRIGATION FACILITIES			
Operation and maintenance:			
Carriage system	249,275	330,179	502,772
Replacements and improvements	39,600	5,000	26,400
Total obligations, irrigation	288,875	335,179	529,172
POWER FACILITIES			
Operation and maintenance:			
Electric generation	717,552	747,629	829,185
Transmission system	359,620	654,520	1,235,005
Replacements and improvements	45,700	67,734	489,300
Total obligation, power	1,122,872	1,469,883	2,553,490
Total obligations, all facilities	2,424,138	3,349,750	4,608,413
Allocation:			
Irrigation	702,908	1,349,110	1,573,654
Power	1,206,221	1,540,446	2,619,368
Municipal water	251,332	217,007	186,195
Flood control	180,079	171,239	159,337
Navigation	83,598	71,948	69,859
Total obligations	2,424,138	3,349,750	4,608,413
Method of financing:			
Allotment	2,428,384	3,349,750	
Unobligated balance	−4,246		
Allotment required			4,608,413

Project statistics

Feature or item	Unit	Actual, fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
IRRIGATION SYSTEM				
Irrigable area:				
Full irrigation	Acres	10,342	10,462	12,000
Supplemental	do	716,496	722,826	723,000
Total		726,838	733,286	735,000
Cultivated area (total)	Acres [1]	547,293	559,000	566,000
Gross crop value	Dollars	143,729,507	147,505,000	146,520,000
Average gross crop value per cultivated acre	do	263	264	259
Storage dams and reservoirs	Number	4	4	4
Diversion dams	do	1	1	1
Pumping plants	do	6	6	6
Canals	Miles	411	411	411
Drains	do	30	30	30
Telephone lines	do	5	5	5
Operating roads	do	385	385	385
POWER SYSTEM				
Annual sales	Kilowatt-hours	2,514,551,476	2,059,000,000	2,048,000,000
Total power revenues	Dollars	9,894,306	9,100,000	9,300,000
Powerplants	Number	2	2	2
Plant capacity	Kilowatts	454,000	454,000	454,000
Patrol roads	Miles	10	10	10
Unmaintained patrol trails	do	425	525	535
Transmission lines	Line miles	344	536	543
Substations	Number	7	7	8

[1] Includes both irrigated and unirrigated areas.

NOTE.—Statistics include all prject features in operational status covered by both operation and maintenance and operation and maintenance during construction.

CONSTRUCTION

Mr. LINEWEAVER. Mr. Markwell will take the construction and Mr. McPhail the power, and then I have a statement to make with respect to the distribution system and operation and maintenance.

Mr. MARKWELL. Mr. Chairman, I would like to submit a statement for the record and I will then summarize it.

Mr. JENSEN. We will be glad to have it.

(The matter referred to follows:)

CENTRAL VALLEY PROJECT, CALIFORNIA

The Central Valley project was authorized as a solution to the problem of distributing excess water from the northern part of the Sacramento Valley to the southern part of the San Joaquin Valley where there exists an insufficient supply. Subsequent authorizations provided for increased power facilities and development of the American River and construction of the Sacramento Canals in northern California. Recently, the Trinity River Division of the project was authorized by finding of feasibility as transmitted by the Secretary of the Interior to the Congress on January 2, 1953. All initial features of the project are substantially complete and in operation, and by June 30, 1953, the project will be approximately 60 percent complete on an obligation basis.

Major work currently being performed includes construction of the Camp Creek diversion dam and tunnel and Sly Park temporary headquarters, Folsom powerplant and appurtenant works, distribution systems for various irrigation districts; turnouts and wasteways for Friant-Kern and Delta-Mendota Canals, West Side Road at Shasta Reservoir, erection of towers on Folsom-Elverta 230-kilovolt transmission line, determination of water rights along the Sacramento and San Joaquin Rivers, and the completion of Tracy pumping plant and Tracy switchward. Construction of Folsom Dam by the Corps of Engineers is continuing.

The work proposed during fiscal year 1954 on the irrigation facilities is generally confined to advancement of construction on the Sly Park Dam and conduits, completion of the Friant-Kern Canal, advance planning work on the Sacramento Canals, and the construction of additional distribution systems. Work on the Sly Park Dam and conduits will consist of continuance of construction activity on the Sly Park Dam, Saddle Dam, Camp Creek diversion dam and tunnel, and the start of construction on the Sly Park-Camino conduit, and temporary hearquarters, and the acquisition of right-of-way for the Sly Park-Camino conduit. Work on the Friant-Kern Canal consists of the installation of metering devices for service to the distribution systems, construction of turnouts for the Orange Cove and Porterville distribution systems and essential alterations to canal checks. Distribution system work will consist of completion of construction contracts and award of minor supply contracts on the distribution systems for the Contra Costa County Water District and for the Plain View Water District, the cleanup of prior year construction and initiation of construction on two separate distribution systems and preconstruction work for the Friant-Kern systems, and award of the final prime contract for the work under the Madera distribution system. Measuring and control devices will be installed at the Contra Costa, Madera, and Friant-Kern Canals and salinty studies will be continued in the Delta Cross channel area.

Work will continue at a vigorous rate on the Folsom power facilities in order that the 175,500-kilowatt generating capacity of Folsom and Nimbus powerplants will be available in fiscal year 1955. During fiscal year 1954 the prime contract for construction of the Folsom powerplant will be completed. Work for the completion of this powerplant will be started and will include the installation on nonembedded turbine parts and powerplant and switchyard equipment. A contract will be awarded for completion of the Nimbus powerplant. Work on the Folsom-Elverta single circuit 230-kilovolt line will consist of constructing towers and footings and completing the switching station so that the stringing of conductors and overhead groundwire will be completed late in the fiscal year.

Other essential work in fiscal year 1954, involving completion of operating facilities, consists of the continuation of construction on the Westside Road for Shasta Dam, core-drill tests at Friant Dam, soil and erosion control at Keswick Dam and collection of detailed design data for fish protective facilities at the Tracy pumping plant. Metering equipment and current relay equipment will be installed as needed in the Shasta-Keswick powerplants and switchyards and revenue metering equipment will also be installed.

No construction activity is proposed for Trinity River Division. However, investigations, covered by general investigations funds, will be continued on the division so that construction can be started at the earliest practicable date.

The continuation of work on the Central Valley project is necessary to help relieve the steadily increasing demands for agriculture, livestock, and power production to meet national defense needs. This is evident from the 53 percent increase in population in the area in the last decade. The demands for water and power are far ahead of the development of a firm supply of these two resources. Without development of the project, standard of production of agricultural products would be held to the 1940 level and many defense efforts would not be possible in the State of California. The facilities of the project will directly affect 2 million people and with an estimated population of 12 million by 1960 California will fall short of meeting its own food and power requirements unless the benefits of the Central Valley project are to be realized. Further, much of the work now programed is essential to provide full and efficient utilization of the completed work and of the Government investment made to date.

Mr. MARKWELL. Mr. Chairman, I would like to point out that the bulk of the funds requested are for the Folsom Dam power facilities on the American River, the activities on which will reach a peak this fiscal year.

The second largest item is for the water distribution systems of the Central Valley project. The third largest item is for the Sly Park division of the Central Valley project, which was authorized for construction and appropriations for construction were made last year. We have awarded some contracts already on that division and are in the process of awarding additional contracts.

The other work is miscellaneous, cleanup work. For example, a road around Shasta Reservoir to provide access to mining properties. We finally reached agreement with the county and we are financing the construction of that road. There are other miscellaneous items, but insofar as I am aware, there is not anything new or unusual in these miscellaneous items.

Mr. MARKWELL. I might mention, Mr. Chairman, there was one item eliminated from the original budget allowance by Secretary McKay for a substation at Camp Stoneman, amounting to $60,000. Secretary McKay recommended it be eliminated.

Mr. JENSEN. And that has been eliminated from your revised sheet?

Mr. MARKWELL. Yes, sir.

Mr. JENSEN. I think someone should go to the map and review briefly the work proposed for 1954 in the Central Valley project.

Mr. MARKWELL. As I indicated before, Mr. Chairman, the area of greatest activity, involving the most dollars for 1954, is in the American River division of the Central Valley project, which we usually refer to as the Folsom Dam power project and transmission line. That includes the powerhouse and powerplant at Folsom Dam, or rather just a short distance below it, and below it Nimbus dam and powerplant which is a reregulating dam to control the river flow from Folsom powerplant.

Mr. JENSEN. Has money been appropriated for that re-regulating dam?

Mr. MARKWELL. Yes. It is under construction at this time.

Mr. JENSEN. I just wanted the record to show that.

Mr. MARKWELL. Perhaps the record should also show that funds have been appropriated for the single unit 230-kilovolt transmission line from the Folsom powerplant to connect with the Bureau's main Central Valley transmission line at Elverta. That is under construction.

The second largest activity dollarwise in the Central Valley project for next year is the construction of the distribution systems.

Last year the Congress told us to go ahead with the Sly Park division of the Central Valley project, which it had previously authorized, and that work is now under way. The tunnel is already under construction. We have received bids on Camp Creek Dam, and are proceeding with that work.

There are other smaller items such as a county road in the vicinity of Shasta Dam which we have finally agreed upon with the county as being a satisfactory, and I hope final, solution of the replacement roads in that area.

There is some money for further studies of fish protective facilities at the Tracy pumping plant. At the present time we have only temporary facilities. They are not wholly satisfactory, but we are proceeding slowly on that, because the size of the works are almost unprecedented. That is a small item, but very important.

I think that covers the situation fairly well except for details. We are doing a little work on the Delta Cross channel, not very much.

SOLANO PROJECT

Mr. JENSEN. While we are on the Central Valley story, what is the up-to-date story on the Solano project for which Congress allowed $3,000,000 for fiscal 1953 with a promise of review by the legislative committee?

Mr. LINEWEAVER. Just before lunch, after you left, Mr. Kirwan asked for the story to be put in the record, but I can give you the highlights at this time.

Mr. JENSEN. If Mr. Kirwan already questioned you on that, it is all right.

Mr. FENTON. He just asked that a statement be put in the record.

Mr. LINEWEAVER. Briefly, Congress included the Solano project in ten new starts last summer, and appropriated $3,000,000 for it with the proviso that the appropriate committee or committees should determine whether or not this project should be constructed as a part of the Central Valley project—there was then pending a bill in the Congress to make it a part of the Central Valley project—and that no money should be spent for actual construction until that determination was made.

Last November the Senate Appropriations Committee and the Senate Interior Committee appointed a subcommittee, of which Senator Knowland was chairman of one group, and Senator Cordon was a member, Senator Chavez, Senator Murray, and Senator Anderson were also members. They held a hearing in Sacramento for 2 days and came up with a report filed about a month ago in which they made the determination that the project should be constructed as an independent unit under the finding of feasibility made by Secretary Krug in 1949.

The report also stated that construction should proceed as provided in the appropriation act.

That report was filed, but the House Interior Committee announced that it also would take jurisdiction over this matter, and it has held some three or four hearings, and this afternoon another hearing is in progress.

Secretary McKay has advised Chairman Poulson of the Subcommittee of the House Interior Committee by letter that he respects the finding of feasibility made by former Secretary Krug in 1948 and that he is advised that the project is economically feasible, but that actual construction will not begin until the Congress resolves the question as to whether or not it shall be constructed as a part of the Central Valley project.

The effect of that letter was to leave the determination to the Congress, and the Secretary has instructed Mr. Beasley, Administrative Assistant Secretary, to advise the chairman of the House committee that the Secretary felt that concurrence of the House committee with the finding or determination by the Senate committee would be necessary. So there the matter rests. What action the House committee will take following the completion of today's hearing, I am not able to say.

As I stated this morning, the opponents of the Solano project, principally from Napa County, were heard, and this afternoon the proponents are being heard.

The project has the backing of Governor Warren of California, and the Bureau is ready to proceed when the Secretary has been advised that the Appropriations Committee report relating to this project has been complied with satisfactorily.

Mr. FENTON. Where is this Solano project?

Mr. LINEWEAVER. It is north of San Francisco Bay and west of Sacramento. Of the $3 million appropriated, approximately $500,000 has been expended on investigations, advance planning, specifications, and designs of Monticello Dam, which will be the principal feature. We were prepared to advertise for bids on Monticello Dam last month, but we withheld advertising for bids pending this determination as provided by the Appropriations Committee report.

Mr. JENSEN. To wrap the story up in a small nutshell, these, I believe, are the facts surrounding this matter:

The Secretary of the Interior authorized this project under a finding of feasibility. Then money was spent which the Congress appropriated for investigations and research. Then, last year, a request was made for construction funds, and the Congress appropriated $3 million for construction, but they put a string on that appropriation by saying in the report that no money should be expended out of that fund until the project received further consideration by the Congress.

Mr. LINEWEAVER. No money for actual construction.

Mr. JENSEN. That is right, until the project was authorized by congressional action.

Mr. LINEWEAVER. I beg your pardon, Mr. Chairman. The report said a determination should be made as to whether or not it should be constructed as a part of the Central Valley project.

Mr. JENSEN. And if not to be constructed as a part of the Central Valley project, then authorization should be given by the Congress.

Mr. LINEWEAVER. I don't so understand the report.

Mr. JENSEN. I will read the language. My secretary hands me this report:

> Funds for Solano also have been allowed with the understanding they will not be used to initiate construction of the project until there is a determination as to whether or not the project is to be constructed as a unit of the Central Valley project. It is further understood that this determination is not to be made until all local interests have had an opportunity to be heard by the proper legislative committee with respect to the question of reauthorization of the project.

Well, you are right and I am also right, to a certain degree, because it says "until all local interests have had an opportunity to be heard by the proper legislative committee with respect to the question of reauthorization of the project," which means reauthorization by the Congress of the United States.

Mr. LINEWEAVER. And that is being done for the second time today. The Senate subcommittee apparently felt that they had heard both sides in Sacramento, and the invitation was given both sides by the House committee to come and be heard, and they are being heard today.

Mr. JENSEN. I believe I speak the sentiment of every member of this committee when I say that we will not appropriate funds for the construction of any project, where construction has not already been started on such subjects, as were authorized under a finding of feasibility by the Secretary of the Interior. So in this instance I am sure that this committee will appropriate no money for the Solano

project or any other project in that category for fiscal 1954. I hope that is plain enough so that all will understand what the position of this committee will be, and if there is any member of this committee that does not concur in that statement, I would like to hear from him at this time.

I hear no voice from any member of the committee.

Mr. BUDGE. I would like to interject that I certainly agree with your general statement. I happen to be somewhat familiar with some projects that were approved on the Secretary's finding of feasibility at the close of the last Congress, and I think the chairman's statement would certainly apply to most of them, but there might be some exception.

Mr. JENSEN. Where would that exception be? I said where construction had not already started. In any words, any project where Congress had not already appropriated money for construction and actual construction had not been started to date.

I asked Secretary McKay, the first time I saw him after he took over the office of Secretary of Interior, if he would authorize any project under a finding of feasibility, and he said, "I will not," and he said it in no uncertain terms. And so I make the statement that I have just made in full knowledge of the feeling of the Secretary of Interior, and because of the knowledge that I have of the feeling of members of this committee, and I do not believe, Mr. Budge, that there is any need for making any exceptions to that rule.

Mr. NORRELL. May I ask a question, Mr. Chairman?

Mr. JENSEN. Yes, Mr. Norrell.

Mr. NORRELL. As I understand, you have taken the position that there must be an authorization?

Mr. JENSEN. Yes, by the Congress of the United States.

Mr. NORRELL. I will say that I agree with that policy. In the field of flood control and rivers and harbors work, the engineers have to go out and investigate the projects and find that they are engineeringly and economically feasible, and they send their report to Congress. That report is referred then to the Public Works Committee, hearings are held, and they may or may not make a favorable recommendation. If they do not make a favorable recommendation, that is the end of it. If they do make a favorable recommendation, it comes to the House. If the House passes it, it goes to the Senate committee, the Senate takes action, and then it must be signed by the President. Before you can get that project started by the Army engineers, you must go through that procedure. You must have a law, an authorization. I do not understand why the Reclamation Bureau should not operate on the same basis. It seems to me what is good for one is good for the other, and I agree with the policy stated by the chairman.

Mr. JENSEN. Thank you. I want to say this: We have spent hundreds of millions of dollars—I presume it amounts to hundreds of millions of dollars—on projects that were authorized by the whim of one man, without being considered by the representative of the people, the Congress of the United States, and authorized by the Congress of the United States. I say that is more power than a bad man should have or a good man should want, and I am glad that Secretary McKay said, "I do not want any such power, and

you may be sure that I shall not authorize any project on my own initiative, even though the law permits me to do so."

Mr. FENTON. As I look at that map over there and see all those tributaries terminating in either the Sacramento or San Joaquin River, it looks to me this thing could go on forever and forever. As I look at the yellow blotches on that map, the irrigable areas, and the green blotches, the irrigated areas, I can see that unless there is some amendment to the original Reclamation Act we are going to have this forever and ever. I just wonder whether it was the intent of the Congress of the United States in the original act to look that far ahead, without breaking the Treasury of the United States.

Mr. LINEWEAVER. The further development of the Central Valley area is governed wholly by the water available. The fact of the matter is that the Sacramento Valley has two-thirds water and one-third irrigable land, while the San Joaquin Valley has two-thirds land and only one-third water. So, there is where your limiting factor would come in, the availability of water.

Mr. BUDGE. Mr. Chairman, I would like to say, on reflecting a little bit, I have no hesitancy in concurring in the remarks of the chairman. I feel, even though there may have been good projects authorized by the Secretary of Interior, I see no reason why the same projects, if they are good, cannot stand an examination by the congressional committees and the Congress prior to appropriations being made for their initial construction.

I note that this particular project that we are considering now has an estimated total obligation of $649,324,134.

Mr. JENSEN. You are speaking of the Central Valley project as a whole?

Mr. BUDGE. Yes. And it was initially authorized, not by the Congress, but by the President, and subsequently by the Secretary, and some small portions by congressional action.

Mr. LINEWEAVER. Mr. Budge, I think it was reauthorized by congressional action before we got into major construction.

Mr. BUDGE. But the initial authorization was not by the Congress of the United States.

Mr. LINEWEAVER. It was under the Emergency Relief Act.

TRINITY DIVERSION PROJECT

Mr. JENSEN. Tell us about the Trinity diversion project.

Mr. LINEWEAVER. Mr. Tomlinson will do that.

Mr. TOMLINSON. The Trinity diversion division would dam the Trinity River at about this point on the map here [indicating], and divert the water through the basin divide into the Central Valley and into the pool formed by the Keswick Reservoir. There would be powerplants both at the dam and at the tunnels, through the divide, to add power to the Shasta-Keswick-Folsom power system. It would make additional water available for irrigation in the Sacramento Valley canals area. The project report contains certain protective provisions, such as making specified minimum releases in the Trinity watershed for fish purposes. There are also allowances in the reservoir operations to provide the water required under the California

county-of-origin law. However, new water would be made available to the Central Valley project and would be useful for the various portions of the project.

Mr. JENSEN. Now I want to read a letter which I have received under date of January 12, 1953, from Mr. Fred J. Moore, Jr., county clerk of Humboldt County, Calif.:

JANUARY 12, 1953.

Congressman BEN F. JENSEN,
House Building, Washington, D. C.

DEAR CONGRESSMAN JENSEN: Enclosed please find a copy of Humboldt County's resolution opposing the action of Oscar L. Chapman as Secretary of the Interior in which he, by executive order, wrote the Trinity River diversion plan into existence. He did so by including that plan in the Federal-State approved Central Valley project by entitling the Trinity River diversion plan, the Trinity River division of Central Valley project of California.

The last Congress did consider a bill introduced by Clair Engle, Congressman from the Second District of California, which would have approved the Trinity River diversion if it had been adopted. We believe this bill died in committee. It most assuredly was never adopted by Congress. Therefore, the Congress of these United States, the constitutionally authorized and recognized legislative branch of our Government, failed to approve a project. Thereafter, the Secretary of the Interior, an executive officer, did so by a mere stroke of the pen.

When the original California water plan was approved by California's Legislature in about the year 1932, a Trinity River diversion plan was authorized therein as a portion of the Central Valley project. Subsequently, during 1939 or thereabouts, California's Legislature, upon reconsidering that project, removed it in its entirety from the Central Valley project. Therefore, the State of California did as our Federal Government did insofar as that at one time it approved the project by Secretary Chapman's action. Thereafter, California reconsidered and removed that plan from its approved plan and struck it from the Central Valley project.

Now, let us look at the factual background in the matter. The Trinity River begins in Trinity County and thence flows into Humboldt County, where it terminates in the Klamath River. The Klamath River flows through our county to the waters of the Pacific Ocean. A glance at forestry-resource maps should disclose the fact that the Trinity-Klamath Basin area or watershed contains the locale of America's foremost virgin-timber supply if not the only major stand yet remaining in the Nation.

The timber resources therein are not yet fully tapped. It is true there is some timber cutting and forestry products manufactured in the fringes of this vast area, but certainly the heart has not yet been touched. There are two new industries in the forestry-industry picture. The newest being chipper plants. A chipper plant is a plant which utilizes that portion of the fallen tree delivered to the mill which was not consumed or utilized in the manufacture of lumber. The residue is then put through a machine which chips it into small particles, using considerable quantities of water. Thereafter, it is made into a finished wallboard product, somewhat similar to Masonite wallboard.

Humboldt County now has a few of these chipper plants. None, however, in the Trinity-Klamath area. America is critically short of pulp supply. More than half of our pulp consumed is imported into America. Pulp now is made in the Washington area. The timber resources of Washington and Oregon are constantly diminishing. Our county is America's foremost timber-resource area, and we intend to maintain that position.

Recently, our farm adviser completed a nationwide tour in which he studied and investigated timber resources and the problem therein in maintaining a perpetuity of timber resources. Our board of supervisors is planning with that objective in mind.

It is therefore only logical to assume that it will only be but a few short years until the American pulp supply will be increased from pulp processed and manufactured in the Trinity-Klamath watershed area. It is conceivable to foresee that this area may become America's leading pulp-manufacturing area. Therefore, in the interest of the people not only of this area but of the Nation as a whole, we seriously urge you to support any move which will assist in the rescinding of the action by Oscar Chapman as Secretary of the Interior, in accomplishing approval by the Federal Government of the Trinity River diversion by

including it in the Central Valley project. We are of the opinion that such action by the Secretary of the Interior was a subterfuge and a circumvention of the powers delegated by the people to its Congress.

The industrial water requirements of this area never have been surveyed by the Federal, State, or local government. The Bureau of Reclamation is now conducting such a survey at the request of this county and the county of Del Norte, Calif. It will be some time before that study is completed. California's Water Resources Board conducted a general water survey, with particular emphasis on agricultural needs. Again, it is only logical that action such as Secretary Chapman took, should have been held in abeyance until the actual industrial water needs of the area can be ascertained.

Your consideration of this request and your favorable action thereon will indeed be appreciated by the people of this area and in time to come by the people in the whole of our Nation.

Very truly yours,

FRED J. MOORE, Jr., *County Clerk.*

Mr. JENSEN. That letter, as I say, was sent to me by Mr. Fred J. Moore, Jr., county clerk, Humboldt County, Calif. He encloses with that letter a copy of resolution No. 656 adopted by the Humboldt County Board of Supervisors on January 5, 1953, which reads as follows:

RESOLUTION NO. 656.—RESOLUTION OPPOSING THE ACTION OF OSCAR L. CHAPMAN, SECRETARY OF THE INTERIOR OF THE UNITED STATES, IN APPROVING TRINITY RIVER DIVISION OF CENTRAL VALLEY PROJECT IN CALIFORNIA

Whereas the Board of Supervisors of the County of Humboldt had previously consistently opposed any diversion of waters from the Trinity River, as first evidenced by its opposition on April 18, 1949, to senate bill No. 111 before the 1949 session of the California Legislature, and subsequently by the adoption of resolution No. 430 on July 25, 1950, by this board of supervisors, said resolution expressing the opposition of the board to the diverting of any waters from the Trinity River; and

Whereas subsequent to the adoption of the aforesaid resolution No. 430 upon July 25, 1950, this board of supervisors appointed a five-man committee to investigate the matter of the proposed diversion of waters from the Trinity River upon December 1, 1950; and

Whereas the committee appointed by this board of supervisors to investigate the proposed diversion of waters from the Trinity River reported to this board of supervisors on the 29th day of October 1951; and

Whereas upon said date, this board of supervisors reiterated its previous position by again stating that the board of supervisors shall vigorously oppose any diversion or attempt to divert any of the waters of the Trinity River; and

Whereas on or prior to November 1, 1951, the Bureau of Reclamation announced the achievement of its report to the Congress of these United States concerning additional storage facilities to supply Central Valley power system in Sacramento Valley, including therein the statement that the Trinity River is the most feasible development therefor; and

Whereas this board of supervisors upon November 1, 1951, in the interests of the general public in this area and the general public of northern California, requested a hearing before the Bureau of Reclamation concerning the Trinity River diversion and forwarded copies of said statement of position to the Bureau of Reclamation and the State Water Resources Board of the State of California; and

Whereas this board of supervisors upon November 13, 1951, adopted Resolution No. 536 reiterating its opposition to the policy of the Bureau of Reclamation to divert waters of the Trinity River to the Central Valley Water Authority and requested a hearing before the Bureau of Reclamation thereon; and

Whereas copies of Resolution No. 536 duly adopted November 13, 1951, were distributed to all Congressmen from California and California's two United States Senators, the Bureau of Reclamation, the Governor, the State engineer, and supervisors of Shasta, Trinity, and Del Norte Counties, and other interested organizations; and

Whereas subsequent to the adoption and forwarding of the aforesaid resolution, representatives of the Bureau of Reclamation appeared before this board

of supervisors and, as a result of the conferences ensuing therewith, this board of supervisors upon April 14, 1952, unanimously adopted Resolution No. 572 in which this board of supervisors requested the Bureau of Reclamation and the Department of the Interior of the Federal Government to make a comprehensive basin survey of the north coastal area of the State of California, and, that due to the urgency existing as to water resources and water needs of the area, that said Bureau be requested to commence the survey as soon as possible, and that the same be pursued with diligence to the end that the needs for water for all purposes of this area may be protected and assured for all present needs and future development of Humboldt County; and

Whereas representatives of the Bureau of Reclamation had given this board of supervisors the opinion that, were this county to request a survey of the present and future water needs, efforts to obtain the Trinity diversion would be withheld until the completion of the natural resource survey hereinabove requested; and

Whereas this board of supervisors on March 31, 1952, unanimously adopted Resolution No. 568 consisting of the protest of the county of Humboldt to the proposed first-form withdrawal by the Bureau of Reclamation in its entirety as set forth in Federal Register, volume 17, No. 46, Thursday, March 6, 1952, and entitled "Trinity River Division, Central Valley Project, California"; and

Whereas within the aforesaid Resolution No. 568, this board of supervisors unanimously protested said withdrawal of land for the Trinity River division of Central Valley project; and

Whereas this board of supervisors was never given the opportunity of a hearing upon said protest; Now, therefore, be it unanimously

Resolved, That this board of supervisors hereby finds and determines that—

1. The Board of Supervisors of the County of Humboldt had consistently until April 14, 1952, vigorously opposed any plan for the diversion of waters from the Trinity River by the Bureau of Reclamation.

2. Upon April 14, 1952, the board of supervisors requested a survey of the water needs of the county of Humboldt to determine the present and future needs of water of the north coastal area.

3. The board of supervisors by action upon March 31, 1952, unanimously adopted its protest to the withdrawal of land for Trinity River division, Central Valley project, by Bureau of Reclamation.

4. The opposition of the Board of Supervisors of the County of Humboldt toward diversion of water from the Trinity River was replaced by its request for a determination of our present and future water needs which determination has not yet been completed by the Bureau of Reclamation.

5. The board of supervisors were given to understand by representatives of the Bureau of Reclamation that efforts to obtain the Trinity diversion would be withheld until the determination of water needs of the north coastal area in accordance with our request adopted April 14, 1952; be it further

Resolved, That the Honorable Oscar L. Chapman, Secretary of the Interior of the United States, be and he hereby is requested to reconsider his stand of January 5, 1953, in which the Trinity River division of Central Valley project of California was approved by the Department of the Interior, and to withhold from such approval until the Bureau of Reclamation has completed its determination of the present and future water needs of the north coastal area of California; be it further

Resolved, That copies of this resolution be forwarded to each Congressman from California; United States Senators Knowland and Kuchel; Oscar L. Chapman, Secretary of the Interior; Douglas McKay, Secretary-select of the Interior; the Honorable Dwight D. Eisenhower, President-elect of the United States; the Honorable Earl Warren, Governor of California; A. D. Edmonston, State engineer; State Senator A. W. Way; and Assemblyman Frank P. Belotti.

Passed, approved, and adopted this 5th day of January, 1953, on the following vote, to-wit:

Ayes—Supervisors: Lindley, Schortgen, Peterson, Hadley and Krei.

Noes—Supervisors: None.

Absent—Supervisors: None.

MARVIN KREI,
Chairman of the Board of Supervisors of the County of Humboldt, State of California.

Attest:

FRED J. MOORE, Jr.,
County Clerk and ex-officio Clerk of the Board of Supervisors of the County of Humboldt, State of California.

Mr. JENSEN. While there is no money in the budget for this project, I thought it well to bring this information to the attention of the committee and of the Bureau, that we may govern ourselves accordingly.

SOUTHWEST CONTRA COSTA COUNTY WATER DISTRICT SYSTEM

Is there any money in this budget for the Southwest Contra Costa County Water District?

Mr. LINEWEAVER. No, sir, there is not a nickel in the budget for that, and I have a statement on that situation and what we did with respect to the proviso in the Interior Department Appropriation Act of 1953 as to investigations to prepare a report on the Southwest Contra Costa County Water District system.

Mr. JENSEN. The statement may be included in the record, without objection.

(The statement is as follows:)

STATUS OF INVESTIGATION OF SOUTHWEST CONTRA COSTA COUNTY WATER DISTRICT SYSTEM

The investigations to prepare a report on the Southwest Contra Costa County Water District system as provided in the Interior Department Appropriation Act, 1953, are in progress. Approximately $24,000 had been spent on this work as of January 31, 1953.

The engineering plan for the works necessary to convey water from the Contra Costa Canal to an intertie with the anticipated local distribution system has been completed. Cost estimates for these works, exclusive of the local distribution system, have been made. A repayment analysis, based upon the capital and annual cost of the conveyance system, exclusive of the distribution system, has been made.

The conclusions from the studies which have been made are that the main conveyance works from the Contra Costa Canal to an intertie with a local distribution system are feasible from an engineering standpoint. That is, the system would not involve any engineering complications which would result in a deviation from sound engineering practices. We have also concluded that the construction costs of the main conveyance system would be in the neighborhood of $6,168,000, that the annual equivalent cost would be $215,500, exclusive of power charges, and that the average annual cost of power would be $35,000. For repayment purposes the maximum water use of 25,000 acre-feet annually specified by the Southwest Contra Costa County Water District was reduced by 20 percent to allow for contingencies in growth rate and system operation. A maximum use of 20,000 acre-feet annually was estimated to occur in the 18th year and continue at that annual rate through the 40th year. An annual water rate of $27.50 per acre-foot would be required to meet annual operational and maintenance costs of the main conveyance system and repay the capital investment in 40 years at two percent interest. This rate of $27.50 per acre-foot includes a charge of $10 per acre-foot for water from Contra Costa Canal at the intake to the Richmond Conduit system.

The Bureau is experiencing considerable difficulty in arriving at an estimate of the cost of the distribution system, which is expected to be constructed beyond the terminal of the Richmond conduit by the local interests. There is a problem in arriving at the extent of an adequate distribution system, and also in estimating annual costs. The legislative language surrounding the current studies requests a determination of the cost of water to the ultimate consumer. This cost to the ultimate consumer involves many complicating elements which extend beyond the works to be provided by the Federal Government. Some of these elements are taxes levied by the local agency, the continuance of present tax levies that would not be eliminated by the construction of a separate industrial water system, annual operating cost of the local water agency, lack of a definite industrial expansion pattern, treatment costs by the individual industries, and costs of making connections to the main distribution system by individual industries. Representatives of the Bureau have had a number of conversations on these matters with the engineer from the Southwest Contra

Costa County Water District and with representatives of the East Bay Municipal Utility District, including their chief engineer, but so far the information is not conclusive.

This Bureau has conducted no negotiations of any sort that would be contrary to the prohibition set up in the Appropriation Act, which directed the completion of engineering studies, but specifically excluded any contract negotiations.

In summary, the Bureau is on fairly firm ground with respect to the engineering plan and costs of the Richmond conduit itself, but is experiencing many complications in arriving at a reasonably firm figure for the added costs that would be involved in conveying the water from the end of the Richmond conduit on to the ultimate consumer.

WHEELING OF POWER

Mr. JENSEN. With respect to operation and maintenance, I notice you expect to pay up to $523,370 for wheeling of power. Does this include the purchase of any power?

Mr. MCPHAIL. No, sir. It is for wheeling charges only.

Mr. JENSEN. Do you rent any REA generating or transmitting facilities?

Mr. MCPHAIL. No, sir.

CONTRACTS WITH WATER USERS

Mr. JENSEN. Tell us briefly the status of contracts with water users. How many are now in effect and how many contracts are being negotiated?

Mr. LINEWEAVER. We have 20 contracts executed with various districts, and contract negotiations in various stages are in progress with 25 other districts. Amendatory contracts have been entered into with 4 districts to cover increased costs. Other contracts are in the process of negotiation.

Mr. Chairman, we feel that the committee should have a complete report on the status of litigation relating to the repayment contracts in connection with the Central Valley and Cachuma projects.

We discussed the Cachuma project a few minutes ago, and I may say that the courts have validated the major repayment contract in connection with the Cachuma project. There are two others to be executed, although they are covered by the overall contract that has been validated by the court.

In the case of the Ivanhoe district validation proceedings before Judge Jones of Lake County, Calif., sitting in Tulare County court, he held that the contract was invalid. It had been approved by the voters of the district. The case has been carried to the Supreme Court of California, but a decision is not anticipated for perhaps a year.

The adverse judgment in the Ivanhoe validation proceedings, to state it very broadly, is based upon the judge's opinion that the contract is in conflict with the laws of California primarily because it does not in his judgment give the water users a water right appurtenent to the land and because it contains the excess-land provisions required by the Federal reclamation laws, which, in his opinion, are unconstitutional.

The entry of this judgment raised a question concerning the advisability of proceeding with distribution-system construction. After carefully considering the matter with Assistant Secretary Aandahl, representing the Department, the view was reached that we should

continue with distribution-system construction substantially as we would have done in the absence of this adverse judgment. That is, where a repayment contract has been approved by the voters at the polls but is awaiting validation by the courts as required by the reclamation law, Assistant Secretary Aandahl instructed me to advise the committee that it was his feeling, on behalf of the Department, that we should proceed with the construction under this restriction, subject of course to the appropriation of funds and consideration of individual cases.

I should point out that in this budget there is approximately $12 million for the construction of distribution systems where contracts have been executed in the Central Valley project, but not all validated.

I have here a tabulation which lists the validated contracts in the Central Valley and on the Cachuma projects with the Santa Barbara County Water Agency. There are eight contracts in the Central Valley project which have been validated.

The contracts approved by the districts but not yet validated in the Central Valley project number 12. Also a contract with the Goleta County Water District contract of the Cachuma project is also awaiting validation.

The third category relates to the Ivanhoe Irrigation District, where the contract has been held invalid. The fourth category covers contracts awaiting execution.

Contracts have been approved as to form and are awaiting execution in the following eight districts:

Central Valley project—Del Puerto, El Dorado, Hospital, Kern Canon, Plainview, Salado, Shafter-Wasco, and West Stanislaus; Cachuma project—Carpinteria and the Summerland districts in the Cachuma project.

In order to close the story with respect to the status of the construction of these distribution systems for the record, I would like to submit the tabulation with a more detailed description under the various headings that I have set out in this table, preceded by a statement on the litigation.

Mr. JENSEN. Without objection, it is so ordered.

(The matter referred to is as follows:)

STATEMENT ON WATER SERVICE AND DISTRIBUTION SYSTEM CONTRACT AND CONSTRUCTION PROGRAM, CENTRAL VALLEY AND CACHUMA PROJECTS

In connection with the construction of irrigation distribution systems by the Bureau of Reclamation in the Central Valley and Cachuma (Santa Barbara) projects in California, a situation has arisen which we believe should be brought to the attention of this committee in order that you may consider the matter of appropriations for fiscal year 1954 in the light of all the pertinent facts

The Federal reclamation laws require that water-service contracts between the United States and irrigation districts be submitted to a court in order that the court may pass upon the validity of the contract. Until such validation is forthcoming, the contract is not binding upon the United States. For the most part, in the Central Valley project and elsewhere, validation by the court has occurred as a matter of course without objection or opposition. In the Central Valley project alone final judgments of validation have been entered by California superior courts with respect to water service and distribution system contracts with seven large irrigation districts.

In three other instances, however—namely, the validation proceedings relating to contracts with the Ivanhoe Irrigation District, the Madera Irrigation District and the Santa Barbara County Water Agency—the validity of the contracts has been challenged. In the Santa Barbara case the Superior Court of

Santa Barbara County upheld the validity of the contract, whereas in the Ivanhoe case the Superior Court of Tulare County denied the validity of the contract. The Madera case has not yet been decided. The attorney general of California has actively participated in both the Ivanhoe and Madera cases in support of the validity of the contracts. In all these cases the contracts were substantially the same, and in each case the opponents of validation opposed the contracts upon substantially the same grounds. The Santa Barbara and Ivanhoe judgments are in the process of appeal to the Supreme Court of California, and the time of an ultimate decision is conjectural. The United States is not a party to these proceedings, but the regional counsel of the Bureau of Reclamation has appeared in the Ivanhoe case as a friend of the court.

The adverse judgment in the Ivanhoe validation proceeding, to state it very broadly, is based upon the judge's opinion that the contract is in conflict with the laws of California primarily because it does not in his judgment give the water users a water right appurtenant to the land and because it contains the excess-land provisions required by the Federal reclamation laws, which in his opinion, are unconstitutional. The entry of this judgment raised a question concerning the advisablity of proceeding with distribution system construction. After carefully considering the matter the Bureau and the Department are of the opinion that we should continue with distribution system construction substantially as we would have done n the absence of this adverse judgment.

The Ivanhoe distribution system is virtually completed. Others are completed or in various stages of construction. The Government has invested nearly a half billion dollars in the dams and canals of the Central Valley project for the purpose of getting water to these distribution systems to fulfill a desperate need for irrigation water. It is inconceivable to us that this water would be withheld from farmers who in every instance voted by overwhelming majorities in favor of these contracts.

Even should the Supreme Court of California affirm the position of the trial court in the one adverse holding involving the Ivanhoe contract, there is no suggestion in that lower-court ruling that appropriate mechanics could not be employed to accomplish return of the irrigation allocation contemplated for repayment by water users. In other words, the continued appropriation and expenditure of funds for distribution systems does not involve a gamble or a business risk on the part of the Federal Government. We are therefore requesting that appropriations for the construction of distribution systems in fiscal year 1954 be approved.

There is attached a table showing the validation status of water service and repayment contracts for the Central Valley and Cachuma projects. Also attached is an analysis of the construction program for distribution systems of the Central Valley project.

Status of water service and distribution system repayment contract validation proceedings—Central Valley and Cachuma projects, Mar. 23, 1953

Contracting organization	Type of contract [1]	Date of contract	Distribution system repayment obligation	Date contract validated	Comments
I. VALIDATED CONTRACTS					
Central Valley project:					
Contra Costa County Water District	WS/R	Sept. 18, 1951	$888,000	Mar. 4, 1952	Also requires municipal water at maximum rate $10 acre-foot.
Lindmore Irrigation District	WS/R	Feb. 28, 1949	4,529,760	May 19, 1949	Amendatory contract June 13, 1952, increasing distribution system obligation to $5,000,000, not yet validated.
Lindsay-Strathmore Irrigation District	WS	Aug. 5, 1948		Mar. 1, 1949	Separate distribution system contract.
Orange Cove Irrigation District	WS	May 20, 1949		Dec. 7, 1949	No distribution system contract.
Stone Corral Irrigation District	WS/R	Dec. 13, 1950	777,000	Sept. 15, 1951	
Southern San Joaquin Municipal Utilities District.	WS	Oct. 18, 1945		Apr. 21, 1950	Amendatory contract, May 13, 1948; validated, Apr. 21, 1950.
Do	R	May 14, 1948	9,959,484	Apr. 21, 1950	
Terra Bella Irrigation District	WS	Sept. 12, 1950		Dec. 17, 1951	
Cachuma project: Santa Barbara County Water Agency.	WS	Sept. 12, 1949		Oct. 22, 1952	Steps for appeal from superior court to State supreme court were initiated Nov. 25, 1952.
II. CONTRACTS NOT YET VALIDATED					
Central Valley project:					
Buckeye County Water District	WS	Dec. 18, 1951			Municipal water service only.
Chowchilla Water District	WS	July 5, 1950			No distribution system involved.
Delano-Earlimart Irrigation District	WS/R	Aug. 11, 1951	9,537,000		Amendatory contract Aug. 5, 1952, increasing distribution system obligation to $14,509,000, also not yet validated.
Exeter Irrigation District	WS/R	Nov. 8, 1950	2,320,744		Amendatory contract increasing distribution system obligation to $4,373,000, not yet executed.
Lindsay-Strathmore Irrigation District	R	Sept. 12, 1950	1,443,000		Amendatory contract Apr. 4, 1952, increasing distribution system obligation to $2,740,000, not yet validated.
Lower Tule River Irrigation District	WS	May 1, 1951			No distribution system involved.
Porterville Irrigation District	WS	Jan. 28, 1952			Do.
Saucelito Irrigation District	WS/R	Feb. 13, 1951	2,644,500		
Summit City Public Utility District	WS	Oct. 22, 1948			Municipal water service only.
Shasta Dam Area Public Utility District	WS	Aug. 12, 1948			Do.
Tulare Irrigation District	WS	Oct. 18, 1950			No distribution system involved.
Madera Irrigation District	WS/R	May 14, 1951	8,320,000		Validation proceedings are before same court that held similar contract invalid with Ivanhoe Irrigation District.
Cachuma project: Goleta County Water District	R	Apr. 10, 1952	3,600,000		Water service obtained from Santa Barbara C. W. A.
III. CONTRACTS HELD INVALID					
Central Valley project: Ivanhoe Irrigation District	WS/R	Sept. 23, 1949	1,589,807		Steps for appeal to State supreme court being taken. Amendatory contract Apr. 23, 1952, increasing distribution system obligation to $2,276,000, not yet validated.
IV. CONTRACTS AWAITING EXECUTION					
Contracts have been approved as to form and are awaiting execution with the following districts: Central Valley project: Del Puerto, El Dorado, Hospital, Kern Canon, Plainview, Salado, Shafter-Wasco, and West Stanislaus. Cachuman project: Carpinteria and Summerland.					

[1] W/S—Water service; R—Distribution system repayment; WS/R—Water service and distribution system repayment.

ANALYSIS OF STATUS OF DISTRIBUTION SYSTEMS, CENTRAL VALLEY AND CACHUMA PROJECTS, CALIFORNIA

Attached hereto is a table dated March 25, 1953, titled "Analysis of Status of Distribution Systems—Central Valley and Cachuma Projects, California." This table lists the irrigation distribution systems in California which have executed contracts with the Bureau of Reclamation for repayment of cost of constructing distribution systems and gives certain information regarding the current and proposed costs in connection with this work. For purposes of analysis, the executed contracts have been subdivided between those which have received court validation, those which have not yet been acted upon and one which the district court has declared invalid. The following paragraphs amplify the information furnished with respect to certain critical districts.

The first four columns on the attached table are self-explanatory. Columns 5 and 6 divide the anticipated costs to be incurred during fiscal year 1953 after February 1 into costs incurred in connection with construction contracts which were active as of January 31, 1953, and those to be incurred in connection with construction contracts to be awarded after January 31, 1953. Column 7 gives the sum of these 2 figures which is the total cost program for the fiscal year subsequent to January 31. Columns 8, 9, and 10 supply similar information for the proposed fiscal year 1954 cost program. In the case of fiscal year 1954, however, costs have been subdivided between those to be incurred in connection with contracts which were active at the start of the fiscal year, i. e., continuing contracts, and those to be incurred in connection with construction contracts to be awarded during the fiscal year.

VALIDATED REPAYMENT CONTRACTS

The Contra Costa County Water District, Lindmore Irrigation District, Stone Corral Irrigation District and the Southern San Joaquin Municipal Utilities District of the Central Valley project have repayment contracts with the Bureau of Reclamation which have been validated by court of competent jurisdiction and on which the time for appeals has expired. These contracts are firm. The amendatory contract with the Lindmore Irrigation District increasing the repayment obligation from $4,529,760 to $5 million is still to be validated.

From the table it can be seen that the only Central Valley project district in this group on which a construction contract was to be awarded after January 1953, is the Contra Costa County Water District. In this case the remaining construction contracts were awarded in March 1953 and the work concerned will be completed in fiscal year 1954.

REPAYMENT CONTRACTS NOT VALIDATED

The Delano-Earlimart Irrigation District, Exeter Irrigation District, Lindsay-Strathmore Irrigation District, Saucelito Irrigation District, and the Madera Irrigation District, all of the Central Valley project, all in this category. The Exeter Irrigation District has an executed repayment contract with the Bureau for $2,320,774. It is now estimated that this must be increased to $4,373,000 to cover all work desired by the district. An amendatory repayment contract has been approved as to form and is awaiting execution. Work beyond the contracts now in force will not be started until the district assumes liability for the increased costs. The fiscal year 1954 program is based on the assumption that the amendatory contract will be approved by the district. The Saucelito Irrigation District voters recently defeated a proposal to increase the amount of their existing repayment contract. Pending final decision as to the wishes of the district, no construction will be initiated in this area.

The Madera Irrigation District consists of three units in various stages of completion. As shown on the table new contracts are proposed for award in the remaining portion of fiscal year 1953 and in fiscal year 1954. The $1,296,600 shown in column 5 includes $1,139,600 contract earnings on a contract now in force for the construction of a portion of unit No. 1. The $425,800 figure in column 6 includes $104,700 of contract earnings on a contract to be awarded during April of 1953 for completion of unit No. 1 and $261,100 contract earnings under a contract awarded in February for a portion of unit No. 3. In column 8, the $2,265,900 cost item contains contract earnings and other costs to be incurred during fiscal year 1954 in connection with these contracts on units No. 1 and No. 3. The column 9 figure of $2,341,600 includes $1,822,200 contract earnings under contracts to be awarded in September and November of 1953 for completion of unit No. 3. The difference between the cost program for the various periods and estimated construction contract earnings represents the expenditures anticipated for supplies, construction facilities, and other indirect costs including

inspection, supervision and administration in connection with the constructon contract activities during that period. All work on the Madera system is scheduled to be completed by the end of fiscal year 1954.

The Delano-Earlimart Irrigation District system also consists of three units. The column 5 amount of $117,900 represents preconstruction activity including the purchase of land and rights, the collection of field data and the preparation of specifications in connection with all 3 units. The $331,600 in column 6 includes $79,000 of construction contract earnings on a contract for unit No. 2 which is scheduled for award in March 1953. This is the only construction contract to be awarded on the Delano-Earliamart system during the current fiscal year. The column 8 figure of $2,818,000 includes $2,068,600 construction contract earnings on this contract for unit No. 2. The column 9 amount of $3,224,200 includes $1,428,500 on a contract to be awarded in August for construction of unit No. 1 and $625,000 contract earnings in connection with the prime contract for the construction of unit No. 3 which is to be awarded in December 1953. As previously stated, the difference between the estimated total costs and contract earnings represents expenditures in connection with supplies, construction facilities, minor force account activities and other indirect costs including inspection and supervision and administration.

On the Goleta laterals of the Cachuma project, relatively little work has been done to date and additional contracts are to be awarded during the remainder of fiscal year 1953 and in fiscal year 1954. All work on this system is programed for completion in fiscal year 1954.

REPAYMENT CONTRACT INVALIDATED

Construction on the Ivanhoe Irrigation District is practically complete. Of the $160,000 shown in column 5, $69,800 represents contract earnings in connection with completion of construction operations. The $62,000 program for fiscal year 1954 represents the miscellaneous cleanup work necessary to complete all work for the distribution system. No construction-contract payments are involved in fiscal year 1954.

STATUS OF DISTRIBUTION SYSTEM REPAYMENT CONTRACTS, CACHUMA PROJECT, CALIFORNIA

Reimbursement of the cost of the Cachuma project will be provided for through the 1949 water service contract with the Santa Barbara County Water Agency and through the execution of distribution system repayment contracts with various districts that are member units of the Santa Barbara County Water Agency.

The distribution system repayment contract with the Goleta County Water District providing for repayment of not to exceed $3,600,000 in 40 years was executed on April 10, 1952. Validation proceedings on this contract were filed by the district on October 24, 1952. Unless there are objections to the contract, it is expected that the validation proceedings will be completed in 1953.

The distribution system repayment contract with the Carpinteria County Water District, providing for repayment of not to exceed $1,800,000 in 40 years, was approved as to form by the Acting Secretary of the Interior on October 29, 1952. This contract was approved by the California Districts Securities Commission on December 12, 1952. In an election held on February 24, 1953, voters of the district, by a vote of 832 for to 27 against, authorized execution of the contract on behalf of the district. Accordingly, this contract is expected to be executed on behalf of the district and the United States by April 15, 1953. Court validation proceedings probably will be filed on behalf of the district within 2 months after execution of the contract.

The distribution system repayment contract with the Summerland County Water District, providing for repayment of not to exceed $400,000 in 40 years, was approved as to form by the Acting Secretary of the Interior on August 28, 1952. Action by the California Districts Securities Commission is expected to take place during April 1953. This contract is similar in form to the Carpinteria and Goleta contracts previously approved by the California Districts Securities Commission. At least 45 days' notice will be required under California law for the local election, and a week for official canvass of votes prior to execution of the contract. With favorable approval by the voters, it is expected that the contract will be executed on behalf of the district and the United States prior to July 1, 1953. Court validation proceedings, likewise, will probably be filed within 2 months after execution of the contract.

In summary, it is expected that distribution system repayment contracts will have been executed with the Goleta, Carpinteria, and Summerland Districts prior to the beginning of fiscal year 1954.

Bureau of Reclamation, Recapitulation

Analysis of status of distribution systems—Central Valley and Cachuma projects, California

Project and water district	Total estimated cost	Earnings to Jan. 31, 1953	Fiscal year 1953 costs after Feb. 1, 1953			Fiscal year 1954 costs			Balance to complete
			Costs in connection with contracts		Total	Costs in connection with contracts		Total	
			Active Jan. 31, 1953	Awarded after Jan. 31, 1953		Active July 1 1953	Awarded after July 1, 1953		
(1-2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CENTRAL VALLEY PROJECT									
I. Validated repayment contracts:									
Contra Costa County Water District	$1,240,000	$312,000	$50,500	$228,800	$279,300	$296,700		$296,700	$352,000
Lindmore Irrigation District [1]	5,000,000	4,828,000	119,000		119,000	53,000		53,000	
Stone Corral Irrigation District	1,265,000	143,600							1,122,400
Southern San Joaquin Municipal Utility District	8,329,000	6,515,000	1,458,000		1,458,000	356,000		356,000	
II. Executed repayment contract but not yet validated:									
Delano-Earlimart Irrigation District	13,504,000	734,400	117,900	331,600	449,500	2,818,000	3,224,200	6,042,200	6,277,900
Exeter Irrigation District	4,373,000	1,703,100	82,200		82,200	15,100	825,000	840,100	1,747,600
Lindsay-Strathmore Irrigation District	2,383,000	2,289,100	93,900		93,900				
Saucelito Irrigation District	4,310,000	261,600							4,048,400
Madera Irrigation District	8,320,000	2,202,700	1,402,900	375,800	1,778,700	2,097,000	2,241,600	4,338,600	
CACHUMA PROJECT									
Goleta Laterals System	3,600,000	348,800	621,000	242,000	863,000	780,000	1,608,200	2,388,200	
CENTRAL VALLEY PROJECT									
III. Repayment contract held invalid:									
Ivanhoe Irrigation District	2,266,000	2,044,000	160,000		160,000	62,000		62,000	
IV. Contracts awaiting execution [2]									

[1] Validated repayment contract is for $4,529,760. Amendatory contract increasing obligation to $5,000,000 yet to be validated.

[2] Contracts have been approved as to form and are awaiting execution with the following districts which program distribution system construction in fiscal year 1954: Central Valley project: Plain View Water District; Cachuma project: Carpinteria County and Summerland County Water Districts.

Mr. LINEWEAVER. We felt, Mr. Chairman, that we should bring this to the attention of the committee, and we so discussed it with Secretary Aandahl with the idea that the committee should have this information and that we should point out what the situation with respect to the litigation is, as set forth in my statement and in the tabulations attached.

Mr. JENSEN. All right. Now, referring to the statement that you have just made regarding those projects that are in litigation, is it possible that some of the money which is requested in the fiscal year 1954 should be withheld, awaiting the decision of the courts?

Mr. LINEWEAVER. Let me make this observation there, Mr. Chairman. We discussed that phase of it.

As I pointed out, on the same type of contract 1 or 2 of the lower courts have held the contracts valid. In one it was pretty hotly contested, and the court held the contract was valid where I understand that practically the same points were raised as in the Ivanhoe case and were validated by the court in that instance.

Now, appeals have been taken, and it will probably be another year before the Supreme Court of California hands down an opinion.

By reason of the interest of the State of California, which has interested itself in this litigation as a party in support of the validation, we hope the hearing before the Supreme Court of California will be expedited.

Now, we do not feel that we are in the position, in the light of the situation and the vote of the people, to say that the districts should be deprived of the water when they have voted to assume repayment obligations. The obligations are, of course, bound up with these phases that Judge Jones held were unconstitutional or violated the California law.

However, the situation is such that we lay the facts before the committee, and we will be glad to analyze the $12 million distribution-system item—so that the committee can fully understand what the situation is as shown in the table in the record.

Mr. JENSEN. Now, supposing this judgment does nullify their contracts, how much should be taken out of the request for funds for any one, or any number of these projects? Here is what I am going to ask you to do, Mr. Lineweaver. I presume this committee will be marking up this bill within the next 10 days. I hope that you can have some more definite information for the committee on which we can act before we start making up the bill.

Mr. LINEWEAVER. I would be very glad to do that, Mr. Chairman.

This approach to the matter was decided on within the last week or 10 days and we have accumulated this information that I have presented here, and we will get a further analysis along the basis of your request, and make it available to the committee next week.

I made it clear, I think, Mr. Chairman, that Assistant Secretary Aandahl participated in the discussion, this decision was made by him, and I was instructed to so advise the committee.

Mr. JENSEN. Yes.

ANALYSIS OF PROGRAM FOR DISTRIBUTION SYSTEMS

Mr. LINEWEAVER. And we will work out the analysis and turn it over to Mr. Culp some time next week.

(The material referred to was submitted later:)

The following table gives a detailed analysis of the program for distribution systems on which construction is scheduled in fiscal year 1954.

If the repayment contracts for one or all of the distribution systems were nullified, and it was decided to award no additional contracts, the possible reductions in the fiscal year 1954 request for this work would be as follows:

(1) Funds requested for contracts to be awarded after July 1, 1953 (col. 5) could be eliminated.

(2) A substantial portion of the other costs associated with these contracts (col. 6) could be eliminated but some of these funds would be required to shut down the unit.

(3) Funds requested for contracts in force July 1, 1953 (col. 3) and other costs associated with these contracts (col. 4) should be allowed on the basis that completion of the work covered by the construction contracts will result in usable irrigation units.

CENTRAL VALLEY PROJECT

Analysis of distribution systems active in fiscal year 1954

Districts and features	Estimated requirements, fiscal year 1954			
	Contracts in force July 1, 1953		Contracts to be awarded	
	Contractors earnings	Other costs	Contractors earnings	Other costs
(1) and (2)	(3)	(4)	(5)	(6)
I. VALIDATED REPAYMENT CONTRACTS				
Contra Costa Water District	221,900	74,800		
Construction contracts:				
Land and land rights				
Specification DC-3880	(217,000)			
Minor construction contracts	(4,900)			
Force account		(4,790)		
Other indirect costs		(70,010)		
Lindmore Irrigation District, unit No. 3	35,000	18,000		
Construction contracts:				
Land and land rights	(20,000)			
Minor construction contracts	(10,000)			
Supply contracts	(5,000)			
Force account		(1,000)		
Construction facilities		(2,000)		
Other indirect costs		(15,000)		
Southern San Joaquin municipal utility district, unit No. 2	40,000	20,300		
Construction contracts:				
Land and land rights	(20,000)			
Minor construction contracts	(20,000)			
Construction facilities		(300)		
Other indirect costs		(20,000)		
Southern San Joaquin municipal utility district, unit No. 3	225,000	70,000		
Construction:				
Land and land rights	(15,000)			
Specifications DC-3327	(170,000)			
Minor construction contracts	(30,000)			
Supply contracts	(10,000)			
Constructions facilities		(11,000)		
Other indirect costs		(59,000)		
II. EXECUTED REPAYMENT CONTRACT BUT NOT YET VALIDATED				
Delano-Earlimart irrigation district, unit No. 1			1,622,865	540,376
Construction contracts:				
Land and land rights			(14,865)	
Prime contract			(1,290,000)	
Minor construction contracts			(123,600)	
Supply contracts			(194,400)	
Force account				(7,000)
Construction facilities				(35,000)
Other indirect costs				(498,376)

Analysis of distribution systems active in fiscal year 1954—Continued

Districts and features	Estimated requirements, fiscal year 1954			
	Contracts in force July 1, 1953		Contracts to be awarded	
	Contractors earnings	Other costs	Contractors earnings	Other costs
(1) and (2)	(3)	(4)	(5)	(6)
Delano-Earlimart, irrigation district, unit No. 2	$2,265,765	$552,219		
Construction contracts:				
Land and land rights	(44,765)			
Specifications DC–3889	(1,753,000)			
Minor construction contracts	(270,800)			
Supply contracts	(197,200)			
Force account		(8,000)		
Construction facilities		(48,242)		
Other indirect costs		(495,977)		
Delano-Earlimart Irrigation District, unit No. 3			$572,000	$389,000
Construction contracts:				
Land and land rights			(21,000)	
Prime contract			(600,000)	
Minor construction contracts			(4,000)	
Supply contracts			(47,000)	
Force account				(1,000)
Construction facilities				(40,110)
Other indirect costs				(347,890)
Exeter Irrigation District, unit No. 1	10,000	5,100		
Construction contracts: Land and land rights	(10,000)			
Construction facilities		(100)		
Other indirect costs		(5,000)		
Exeter Irrigation District, units Nos. 2 and 3			592,107	232,893
Construction contracts:				
Land and land rights			(30,000)	
Prime contract			(420,000)	
Minor construction contracts			(40,000)	
Supply contracts			(102,107)	
Force account				(6,563)
Construction facilities				(15,000)
Other indirect costs				(211,300)
Madera Irrigation District, unit No. 1	1,555,100	396,000		
Construction contracts:				
Land and land rights	(100,000)			
Specifications DC–3721	(289,000)			
Specifications DC–3915	(655,000)			
Minor construction contracts	(491,400)			
Supply contracts	(19,700)			
Force account		(900)		
Construction facilities		(45,000)		
Other indirect costs		(351,000)		
Madera Irrigation District, unit No. 3	448,000	33,100	1,504,200	401,256
Construction contracts:				
Land and land rights	(318,000)			
Specifications DC–3865	(100,000)			
Prime contract, part 2			(643,300)	
Prime contract, latitude 24.2			(520,900)	
Minor construction contracts	(30,000)		(330,000)	
Supply contracts			(10,000)	
Force account		(100)		(800)
Construction facilities		(3,000)		(26,456)
Other indirect costs		(30,000)		(374,000)
III. REPAYMENT CONTRACT HELD INVALID				
Ivanhoe Irrigation District	41,000	21,000		
Construction contracts:				
Land and land rights	(20,000)			
Minor construction contracts	(11,000)			
Supply contracts	(10,000)			
Force account		(4,000)		
Construction facilities		(2,000)		
Other indirect costs		(15,000)		
Total	4,841,774	1,191,446	4,391,172	1,563,525

TRACY SWITCHYARD

Mr. JENSEN. Now, I have a few more questions about the Central Valley.

The Senate committee and the conference committee last year took note of some 60-kilovolt and 110-kilovolt facilities which had been installed and were being installed in the Tracy switchyard.

The conference committee report contains this statement with reference to the facilities at Tracy:

> At the Tracy switchyard the 115- and 69-kilovolt equipment should be removed as recently ordered by the Secretary of the Interior.

Now, a representative of the Bureau's Sacramento regional office recently testified before a California legislative committee to the effect that the Bureau planned to have its Central Valley project transmission facilities completed by the year 1957, or about that time.

Now, it might be assumed that some of these additions and extensions could involve these facilities at Tracy.

Will you supply for the record the total expenditures which have been made on these facilities referred to in the conference report, and also supply for the record exactly what disposition has been made of these facilities, whether they have been removed, and if so, what has been done with the material.

Mr. LINEWEAVER. Yes, sir; we will be very glad to do that.

(The matter referred to is as follows:)

CENTRAL VALLEY PROJECT, TRACY SWITCHYARD

In accordance with the instructions of the Secretary of the Interior to dismantle and dispose of the 115-kilovolt customer service facilities in the Tracy switchyard, all major equipment has been disconnected and removed or stored in place pending its removal as required for installation at other locations. A current report on the status of this dismantling and disposing work is as follows:

1. Equipment and material already dismantled and disposed of:
   - A. Four bays of 115-kilovolt structural steel shipped to region 3 for installation in Prescott substation, Arizona.
   - B. Two 115-kilovolt oil circuit breakers shipped to region 3 for installation in Prescott substation, Arizona.
   - C. Four 115-kilovolt selector switches with steel supports shipped to region 3 for installation in Prescott substation, Arizona.
   - D. Two steel supports for two 115-kilovolt disconnect switches shipped to region 3 for installation in Prescott substation, Arizona.
   - E. Three 115-kilovolt potential transformers transferred to region 3 for installation in Prescott substation, Arizona.
   - F. 115-kilovolt overhead bus material for four bays shipped to region 3 for installation in Prescott substation, Arizona.
   - G. One 115-kilovolt PCA coupling capacitor was assembled and installed on one of the 230-kilovolt P. G. & E. Co. line connections at Tracy.
   - H. Two 69-kilovolt oil circuit breakers shipped to region 6 for installation in Huron substation, South Dakota.
   - I. Two 69-kilovolt disconnecting switches shipped to region 6 for installation in Huron substation, South Dakota.
2. Equipment and material to be dismantled and disposed of as indicated:
   - A. Two 115-kilovolt oil circuit breakers to be installed at Folsom switchyard.
   - B. Four 115-kilovolt disconnecting switches to be installed at Folsom switchyard.
   - C. One control board consisting of 7 panels, of which 5 or 6 panels are to be installed at the Folsom-Elverta terminal switching station, and 1 panel is to be installed at Nimbus powerplant.
   - D. Control cable, insulated conductors, and asbestos cement cable tray material to be installed at Folsom switchyard.

3. Equipment and material to be dismantled but for which no disposition has been determined:
   A. Two steel supports for two 115-kilovolt disconnect switches.
   B. Steel supports for three 115-kilovolt potential transformers.
   C. Two steel supports for two 69-kilovolt disconnect switches.
   D. Two 69-kilovolt potential transformers and steel supports.
   E. Switchyard lighting materials.
4. Equipment and material to be stored in place:
   A. 115-kilovolt structural steel which is insufficient for two bays unless attached to an existing structure of similar design.
   B. Two 69-kilovolt selector switches with two steel supports.
   C. 69-kilovolt structural steel which is insufficient for two bays unless attached to an existing structure of similar design.

PREFERENCE CUSTOMER METERING FACILITIES

Mr. JENSEN. The justifications indicate that the Bureau will have expended $160,991 for "Preference customer metering facilities" by June 30 of this year.

Under what authority has the Bureau expanded these facilities?

Mr. MCPHAIL. Mr. Chairman, those facilities are to take care of metering the energy which is supplied to customers of the United States by means of wheeling over the system of the Pacific Gas & Electric Co. They are necessary in order to determine the amount of power that has been delivered and the resulting power bills to those consumers. They also determine what payments will be made to the Pacific Gas & Electric Co. for wheeling the power involved.

Mr. JENSEN. So, you contend that the Bureau does have full authority to expend appropriated funds for this purpose?

Mr. MCPHAIL. In my opinion it does. It is a necessary adjunct to the sale of the power involved.

Mr. JENSEN. Has the Bureau ever requested, or has the Congress ever appropriated, funds for this purpose specifically?

Mr. MCPHAIL. I would have to check the record on that. In my opinion, yes, but I cannot answer positively without checking.

Mr. JENSEN. All right; furnish that information for the record.

Mr. MCPHAIL. Yes, sir.

(The matter referred to follows:)

AUTHORITY TO PURCHASE AND INSTALL METERING EQUIPMENT, CENTRAL VALLEY PROJECT

The Central Valley project was reauthorized by act of October 17, 1940, chapter 895 (54 Stat. 1198, 1199). Section 2 provides in part "* * * for the generation and sale of electric energy as a means of financially aiding and assisting such undertakings, * * *."

In order to properly account for electrical energy sold, it is necessary to measure the amount of energy used. Therefore, the Bureau of Reclamation, as part of its responsibility in marketing power, has provided metering equipment to measure the power it has sold in order to determine the revenue to be received as a financial aid to the Central Valley project. Since the control of metering equipment must be wholly within the Bureau in order that its operation and accuracy may be maintained within the Government, its installation and ownership by the Bureau is necessary.

This is the first year that the metering equipment has been shown on the control schedules as a separate item. It was done to indicate that no transmission lines or substations were required in connection with this metering equipment, since those facilities were already available.

Mr. JENSEN. Also, please furnish for the record an itemized breakdown of the expenditure of $168,991 for metering equipment, indicat-

ing the amount expended for each preference customer. Will you do that?

Mr. McPHAIL. Yes, sir; I shall be very glad to.

(The matter referred to follows:)

Customer metering facilities through fiscal year 1953

	Total estimated expenditures
Castle Air Force Base	$2,205
Do	3,000
Mather Air Force Base	2,200
Travis Air Force Base	2,200
Camp Beale Air Force Base	2,820
Benicia Arsenal	9,176
Camp Stoneman	2,280
Sharpe General Depot (Lathrop)	2,220
Sharpe General Depot (Lyoth)	2,209
Mare Island	30,700
Moffett Naval Air Station	3,010
Stockton Naval Supply Depot	2,920
West Side Irrigation District	1,840
Folsom Prison	1,900
Folsom Prison switchboard	1,750
Folsom powerhouse	2,300
Folsom headquarters	1,400
Folsom construction power	3,000
Folsom-Nimbus contractors	19,800
Friant Dam and camp	2,870
Deuel Vocational Institution (Tracy)	2,160
Parks Air Force Base	2,880
Provident Irrigation District	2,260
Air Force Command (Dixon)	700
Columbia Mowry powerplant	2,950
Dewitte State Hospital	2,465
Agnew State Hospital	1,905
University of California (Davis)	2,465
East Bay Municipal Utility District (Lafayette)	6,050
Sacramento Municipal Utility District	35,206
Replacements	10,150
Total	168,991

Mr. JENSEN. Also furnish for the record a similar itemized breakdown, by customer, of the $220,119 requested for the fiscal year 1954 for this same function.

Mr. McPHAIL. Yes, sir.

(The matter referred to follows:)

Customer-metering facilities for fiscal year 1954

	Estimated expenditures, fiscal year 1954
Bureau customers served or to be served through wheeling:	
Air Force Command (Dixon)	$1,600
Sharpe General Depot (Stockton)	2,465
Sutter Extension Water District	3,270
Princeton-Cadora-Glenn	3,270
Sacramento Municipal Utility District	209,514
Total, fiscal year 1954	220,119

FOLSOM POWER FACILITIES

Mr. JENSEN. Also please supply for the record a detailed breakdown of the items included under "Folsom power facilities"; that is,

the Folsom powerplant, Folsom and Nimbus switchyards, and so forth, and "Folsom transmission facilities"; that is, the Folsom 230-kilovolt interconnecting transmission line, Folsom-Nimbus transmission line, and so forth.

Mr. McPHAIL. Yes, sir; I shall be glad to.

Mr. JENSEN. And under each item give the total estimated cost, the money expended through June 30, 1952, the estimated expenditures for fiscal year 1953, and the program of expenditures for fiscal year 1954, including the expenditure of unexpended balances and new money requested, and the balance to complete after the fiscal year 1954.

Mr. McPHAIL. Yes, sir; I shall be glad to do that.

(The matter referred to follows:)

	Total estimated cost	Expenditures through June 30, 1952	Estimated expenditures, fiscal year 1953	Program, fiscal year 1954	Balance to complete
Folsom power facilities	$43, 162, 000	$4, 485, 163	$11, 366, 841	$14, 424, 327	$12, 885, 669
Folsom Powerplant and river-channel improvements	(21, 547, 000)	(3, 678, 430)	(6, 222, 647)	(7, 245, 080)	(4, 400, 843)
Folsom switchyard	(2, 532, 000)	(73, 736)	(466, 000)	(1, 218, 941)	(773, 323)
Nimbus Powerplant	(4, 454, 000)	(175, 239)	(1, 231, 000)	(1, 855, 000)	(1, 192, 761)
Nimbus switchyard	(182, 000)	(15, 759)	(49, 200)	(78, 136)	(38, 905)
Nimbus afterbay dam and reservoir	(9, 036, 000)	(324, 841)	(3, 219, 000)	(3, 907, 402)	(1, 584, 757)
Folsom-Nimbus interconnection	(189, 000)	(33, 152)	(5, 000)	(119, 768)	(31, 080)
Folsom power-facilities warehouse	(278, 000)	(165, 743)	(112, 257)	----------	----------
Folsom definite plan report	(30, 000)	(18, 263)	(11, 737)	----------	----------
Participating agency studies	(50, 000)	----------	(50, 000)	----------	----------
Participation by Corps of Engineers	(4, 864, 000)	----------	----------	----------	[1] (4, 864, 000)
Folsom transmission facilities	1, 880, 000	261, 314	962, 000	656, 686	----------
Folsom Powerplant to point of interconnection with east-side line near Elverta; 20 miles of 230-kilovolt interconnection transmission line, and facilities	(1, 880, 000)	(261, 314)	(962, 000)	(656, 686)	----------

[1] The Corps of Engineers will request this estimated amount of funds to install equipment and perform excavation and channel improvements chargeable to power facilities authorized to the U. S. Bureau of Reclamation.

Mr. FENTON. This Central Valley project was authorized in 1935?

Mr. MARKWELL. Yes, sir.

Mr. FENTON. Now, as I understand it, the enabling act was supposed to develop the water facilities of all of the rivers in that area. The original Central Valley project had a definite objective, did it not; that is to say, it started up at Shasta and came down to Bakersfield?

Mr. LINEWEAVER. Yes, sir.

Mr. FENTON. And in that original project there were certain basic elements to be taken into consideration. Now, as I look over your program here I find the Folsom Dam and Reservoir is completed?

STATUS OF SHASTA DAM AND RESERVOIR

Mr. LINEWEAVER. No, sir; only Shasta Dam and Reservoir and Keswick Dam. Folsom is on the American River, and it is under construction by the Corps of Engineers.

Mr. FENTON. Yes. You still have $405,000, have you not, in this year's appropriation to complete that?

Mr. LINEWEAVER. Yes, sir, for Shasta Reservoir.

Mr. FENTON. I thought Shasta Dam was a complete project long ago. What is that $405,000 remaining? In other words, I am trying to get down to what the chairman said a few minutes ago regarding the things that should be completed, necessary things. Why would that dam and reservoir still be classified as uncompleted, and the same thing with respect to the Keswick Dam?

Mr. MARKWELL. The principal item included in that $405,000, Dr. Fenton, is the completion of the west-side road by Shasta County with funds advanced by the Bureau.

Its primary purpose is to serve certain mining properties which are located on the west side of the Shasta Reservoir which were formerly served by roads which are now inundated by Shasta Reservoir.

You might recall some years ago, Doctor, there was some debate as to whether it would be best to have ferry service across the lake or whether we should build a road around it. Agreement has now been reached that a road should be built, and we have asked the county to build the road for us.

Mr. FENTON. As I understand this Central Valley project, it was to establish this complete basic system, and I find that a lot of the items here have not been completed, like Delta steam plant, Sacramento Canal, Sacramento area, Shasta, and Tracy east side transmission line. Has that been completed?

Mr. MARKWELL. Yes, sir; the transmission line is completed.

Mr. FENTON. How many miles of canal are now functioning, that is, main canals in this original project?

Mr. MARKWELL. The full system is functioning, Dr. Fenton, as far as the Delta-Mendota Canal is concerned, and the Friant-Kern Canal and the Madera Canal. Those are the main canals.

In the Delta area there will be, in all probability, additional work to open up the sloughs as the demand for water to be pumped by the Tracy plant becomes greater.

It is functioning all right now, but as we begin to draw water into the Tracy pumping plant we may have to open up and widen more sloughs.

To answer you more specifically, sir, the Contra Costa Canal system, 48 miles long, is almost completed; the Madera Canal, 36 miles long, is virtually completed; as well the Friant-Kern Canal, which is 153 miles long. The Delta cross channel, 50 miles long, is partially completed. The Delta-Minidoka Canal, 117 miles long, is almost complete. The Sacramento Canals are a new unit.

Mr. FENTON. Which one?

Mr. MARKWELL. The Sacramento Canals would be 166 miles long. Construction has not started on them.

STATUS OF FRIANT-KERN CANAL

Mr. FENTON. Then the Friant-Kern Canal is not completed now?

Mr. MARKWELL. It is virtually completed. We are finding some additional work necessary. We estimate $810,000 in 1954, $83,000 in 1955, $99,000 in 1956, and $19,000 in 1957. That is brought about because there is some heaving in the canal bottoms due to soil conditions which we are now encountering.

There was an earthquake out there which cost us some additional money in that we had to flatten out the slope of a bank for fear it

would slide in on the canal and destroy a bridge which is located at the canal right at that point. The canal is in operation, as you know, but its total estimated cost has been increased by about $1 million. And it will have been completed by the end of this year. That is not an unusual situation, when you consider the length and the size of a canal of that sort. I mentioned the Delta cross channel a few moments ago. We are experimenting on that with the hope that we will not have to build the full 50 miles of the cross channel through high ground, as was originally contemplated. Several million dollars may be saved because of that.

Mr. FENTON. Where is the Delta cross channel on the map?

Mr. MARKWELL. It is west of San Francisco Bay [indicating]. It was originally contemplated that because of salt intrusion near the mouth of the Sacramento River as it flows down toward the bay it would be necessary to build the canal clear around through high ground to divert the water directly into the new canal from the Sacramento River to the San Joaquin River.

At the present time they are successfully diverting the water by enlarging the sloughs and digging a cutoff, and they are putting in tide gates, all at cost very much lower than originally contemplated.

I am not ready yet to say, sir, that when the full amount of water is required to be diverted that the slough system will work, but we hope we can devise means of doing that and save several million dollars.

TRACY PUMPING STATION

Mr. FENTON. Now, the heart of that project, of course, is at that pumping station there, the Tracy pumping station.

Mr. MARKWELL. Yes, sir.

Mr. FENTON. Which diverts the water from the confluence of the San Joaquin and Sacramento Rivers, takes it up over 200 feet, and then down into this Delta-Mendota Canal, is that right?

Mr. MARKWELL. Yes, that is right, generally speaking.

Mr. FENTON. Which goes on down to replenish the waters of the San Joaquin?

Mr. MARKWELL. That is correct. The Delta-Mendota Canal furnishes water to the Delta-Mendota pool which replenishes the water from the San Joaquin which is stored behind the Friant Dam. This water is diverted into the Friant-Kern Canal and into the Madera Canal.

Mr. FENTON. Now, what is the status of the facilities for the heart of that project; are they completed or not?

Mr. MARKWELL. The Tracy pumping plant which is a large structure—the Tracy plant and intake canal, which is estimated to cost $16,338,000 will be completed at the end of the fiscal year 1953.

There will still be a small amount of work remaining to be done at the Tracy switchyard where the big transmission lines come together and furnish power for the plant. Those are relatively small amounts of money.

Mr. FENTON. Yes, that is what I am talking about. Why cannot the heart of this thing be completed, and why can you not then go on from there to get the rest of the original project completed before you spread out all over the map without first completing these very necessary things?

Mr. MARKWELL. With reference to the switchyard, Dr. Fenton, may I say that I am in agreement with you in principle. Of the Tracy switchyard, at a total cost of $6,500,000 there will be only about $275,000 worth of work to be done in the fiscal years 1955 and 1956 to completely wind it up.

Mr. FENTON. What is the holdup?

Mr. MARKWELL. Well, it is not always possible to put the finishing touches on that as rapidly as you would like to. As you have probably observed in building a house and you think you have it complete, but you keep on with the finishing touches for another month.

Mr. FENTON. Yes, but if it is a question of money that is holding you up it is such an insignificant amount compared with these other projects that you start on that it seems to me it is not practical at all. That is the only complaint I have about the thing: This scrambling around all over the territory without completing basic projects.

Mr. MARKWELL. I share your feelings, sir, but we have to come before you, according to the rules, and ask only for the amount of money which we need for each fiscal year, not the amount necessary to complete them.

Mr. FENTON. Now, you know that it is different from that. I am talking about the present now. You can ask for an insignificant amount to complete something that is very necessary when you come up here with an additional request for some new project for a couple of million dollars.

That is all I have, Mr. Chairman.

PERSONNEL

Mr. BUDGE. In the fiscal year 1953 I note that there are 475 permanent positions for the Bureau of Reclamation on this project, and in the fiscal year 1954 it is requested that the number of permanent positions be raised to 545.

Who would like to tell me how many employees the Bureau of Reclamation has this year in the State of California?

Mr. LINEWEAVER. I cannot tell you exactly, Mr. Budge, at this time because we have offices out in the Central Valley project, Cachuma, Coachella, and we have a few people in Los Angeles. It is somewhere along about 2,500 or a little more than that. I will get you the exact figures by offices.

(The matter referred to follows:)

Bureau of Reclamation employment as of Feb. 28, 1953

State of California	2,110
City of Los Angeles	12

Mr. BUDGE. It would be in the neighborhood of 2,500 for the entire State of California?

Mr. LINEWEAVER. I think so.

In region 2, for instance, we have 2,100, but that includes some in the Klamath project in Oregon, which is a part of region 2. Then we have region 3, extending into the Coachella Valley, and the San Diego aqueduct which we are building under contract with the Navy.

Mr. BUDGE. How many employees do you have in Los Angeles?

Mr. LINEWEAVER. In Los Angeles we only have the regional counsel for region 3, and a small procurement office with only 1 or 2 people in it, I believe.

Mr. BUDGE. You have two regional offices in the State of California?

Mr. LINEWEAVER. No, sir; region 3 headquarters is at Boulder City, but its jurisdiction extends to southern California, the All-American Canal area, and the Colorado River Basin.

Mr. BUDGE. Why do we need 70 additional employees on this project?

Mr. LINEWEAVER. My offhand observation on that, Mr. Budge, is that the need would come from additional operation and maintenance employees, permanent employees, because of the completion of additional irrigation facilities and because of the completion of some additional power facilities and, perhaps, the speeding up of the construction of the Folsom powerplant and maintenance in there.

I might make this observation: that the entire personnel situation in the Bureau, as well as in the rest of the Department, I am advised, is being subjected to very close scrutiny.

The Secretary, about a month ago, put in force an order on the filling of vacancies. No vacancies in permanent positions can be filled without the approval of the Secretary's office.

Mr. BUDGE. Will we, in the near future, have a personnel statement so that if there is to be a readjustment of this request for 545 employees we will have it before the bill is marked up?

Mr. LINEWEAVER. Yes, sir.

I will give you an analysis of that, and, of course, the number of personnel will be adjusted to the allowance for personnel and the program, to whatever the committee and the Congress finally approves.

Mr. BUDGE. I think 2,500 is a little conservative, but assuming that there are 2,500 employees in the Bureau of Reclamation in the State of California, how many employees do you have in the Bureau of Reclamation in the Washington office?

Mr. LINEWEAVER. There are about 300 on the Reclamation payroll; that is, financed out of Reclamation funds. We have what we call a foreign-activities group that is financed out of the funds which are turned over to the Bureau by the TCA and point 4 programs and activities of that kind.

FOREIGN ACTIVITIES

Mr. BUDGE. Could you give the committee an idea as to the number of employees you have in those programs and the total amount that is spent by the Bureau on them?

Mr. LINEWEAVER. Yes, sir; I can bring that right up to date for you.

(The matter referred to follows:)

STATEMENT ON FOREIGN ACTIVITIES

With the increase of food production continuing to be one of the principal aims of the United States Government's foreign-aid program, the demand for Bureau of Reclamation assistance in these programs has continued to expand. At the present time there are 72 employees in 15 countries on assignments ranging in length from a few weeks to 2 years. Participation in the foreign program has been at the request of both TCA and MSA.

In addition to the programs of technical assistance in which TCA or MSA provided funds the Bureau of Reclamation has furnished assistance through

negotiated agreements with several foreign countries. Under Public Law 402, 80th Congress, Government agencies, such as the Bureau of Reclamation, are authorized to provide technical assistance directly to other countries upon request, and provided that the cost of such services is paid by the requesting country. The Bureau now has agreements of this type with Australia, Chile, India, and Thailand.

Aside from providing technical assistance by the dispatch of reclamation specialists overseas, the foreign program of the Bureau of Reclamation embraces a variety of activities. Among them are:

(*a*) Participation in international technical conferences as requested and authorized by the Department of State.

(*b*) Distribution of technical publications prepared by Bureau employees to libraries, organizations, firms, and individuals in foreign countries.

(*c*) Training foreign nationals at Bureau establishments in this country.

(*d*) Providing advice and information to visitors from other countries.

(*e*) Providing answers to technical engineering questions submitted in writing by foreign governmental organizations.

(*f*) Performance of laboratory tests, model tests, design analysis, and review of and for irrigation and hydroprojects in foreign countries.

All of the foregoing activities are performed only to the extent that funds outside reclamation appropriations are made available and upon assurance by the Department of State that the activity or service is in the interest of, or furthers, the national policy of the United States.

Under the program for providing training to foreign nationals, for example, the Bureau of Reclamation accepted 50 "trainees," usually for 1-year periods, in the first 7 months of fiscal year 1953. There were also 50 trainees carried over from fiscal year 1952. These "trainees" are foreign engineers who engage in a definite prescribed course designed to better equip them to tackle the engineering problems they will encounter on their return to their own country. In addition, a number of highly trained engineers who do not have time for, nor require, training in the usual sense, have spent relatively short periods in observing the Bureau's more complex engineering procedures. These "observers" are usually interested in obtaining information and advice on certain specific problems. The Bureau has received 69 official observers thus far in fiscal year 1953. Thirty-three countries have been represented in this program of training and observation.

Throughout the year the Bureau receives a number of visitors who are referred officially to the Bureau by the Department of State. Such persons are designated as "accredited visitors" and receive more attention than that afforded an ordinary tourist, but considerably less than that given an "official observer." "Accredited visitors" are usually nonengineering, nontechnical persons, newspaper editors, labor leaders, businessmen, professors, and the like, whose visits have been arranged for by State or ECA as a part of some special phase of the foreign program.

Regular charges have been established to cover the cost of this training and observation program. The sponsoring agencies are required to pay these charges before individuals are accepted into the program. The charges as established no more than cover the cost to the Bureau of providing the technical engineering guidance and supervision and administration of these foreign nationals, plus, in the case of "trainees," a sum of $50 for the purchase of books. The following table shows this schedule of charges:

Trainees, over 6 months (per year)	$950
Trainees, 6 months or under (per 6 months)	850
Observers, under 30 days (per day)	20
Observers, over 30 days (per day)	12

All these activities, both technical-assistance and training, are wholly financed from nonreclamation funds. Technical assistance or training is not made available by the Bureau of Reclamation unless the request therefor is received through proper diplomatic channels, and only then when the domestic program will not be materially interfered with.

Résumé of Bureau of Reclamation missions and agreements

	TCA	(ECA) MSA	Special agreement	Total
1951:				
Number of projects	6	3	4	13
Personnel	23	5	4	32
Countries	6	3	4	13
Amount	$150,000	$20,000	$35,000	$205,000
1952:				
Number of projects	13	2	3	18
Personnel	55	4	9	68
Countries	12	2	2	16
Amount	$767,000	$35,000	$42,000	$844,000
1953 (in operation or authorized):				
Number of projects	22	2	5	29
Personnel	102	8	8	118
Countries	16	2	4	22
Amount	$1,300,000	$51,000	$350,000	$1,701,000

Bureau of Reclamation, foreign assignments, fiscal year 1952—Calendar year, 1952

Country and name	Grade	Salary	EOD
Iran:			
James F. Beall, Jr.	IV-4	$9,130	May 12, 1952
Boris N. Bulatkin	IV-4	9,076	Sept. 12, 1952
Edgar E. Foster	IV-4	9,130	Sept. 10, 1952
Robert S. Wickham	IV-6	4,719	Feb. 18, 1952
William E. Wheeler	IV-4	7,563	May 12, 1952
Iraq:			
Robert M. Brown	IV-6	5,079	June 5, 1952
William H. Farmer	IV-4	6,963	Mar. 2, 1952
J. D. Hancock	IV-2	11,130	June 3, 1952
Harold W. E. Larson	IV-4	6,963	June 18, 1952
Harold E. Miller	IV-3	10,330	Sept. 17, 1952
William C. Reimund	IV-5	5,913	July 25, 1952
Howard N. Watenpaugh	IV-3	9,130	June 14, 1952
Fred Locher	IV-3	9,130	Dec. 20, 1951
Jordan:			
David E. Bunger	IV-4	7,863	Nov. 4, 1952
Clarence M. Jackson	IV-3	9,130	July 19, 1952
Russel E. Kilgore	IV-3	9,730	July 31, 1952
Arthur M. Kent	IV-4	6,963	May 29, 1952
Thomas R. Ramsay	IV-4	7,863	Sept. 26, 1952
Liberia:			
Carl M. Spainhour	IV-3	11,030	Feb. 25, 1952
Robert Williams	IV-3	9,130	Sept. 2, 1951
Libya:			
Alfred E. Caswell	IV-6	5,079	Sept. 11, 1952
Hal J. Jennings	IV-3	9,130	Mar. 30, 1952
Reed N. Lewis	IV-4	6,963	July 2, 1952
Nicaragua: Norval L. Pope	IV-4	8,163	Nov. 20, 1951
India:			
Clemeunt T. Douglass	IV-3	10,030	Apr. 1, 1952
Mark Eldredge	IV-2	11,130	Dec. 16, 1952
J. W. Robison	IV-3	10,030	Aug. 27, 1952
David S. Stoner	IV-2	11,500	Nov. 29, 1952
Albert N. Thompson	IV-2	11,500	May 12, 1952
Fred H. Hartz	IV-3	9,130	May 3, 1952
Hugo Marek, Jr.	IV-4	7,263	May 1, 1952
Clifford L. Mutch	IV-2	11,500	Mar. 9, 1952
Clarence Rawhouser	IV-2	11,500	Jan. 20, 1952
Paul Von der Lippe	IV-3	11,030	Feb. 17, 1952
Afghanistan: Stanley T. Elcock	IV-3	9,130	Aug. 10, 1952
Lebanon:			
Howard J. Ferris	IV-4	6,963	Mar. 18, 1952
Sumner B. Foster	IV-2	11,130	Jan. 18, 1952
Albert E. Gibbs	IV-5	6,713	June 11, 1952
William W. Gorton	IV-3	9,130	July 9, 1952
Clifford S. Gysland	IV-3	9,130	Apr. 20, 1952
Robert J. Haefeli	IV-5	5,913	Dec. 1, 1952
Robert M. Haugen	IV-4	6,963	Mar. 29, 1952
F. A. Houck	IV-2	11,130	Feb. 15, 1952
Darwin N. Jepsen	IV-3	10,030	May 9, 1952
Robert F. Kaser	IV-3	9,730	Jan. 24, 1952
Frederick N. Keay	IV-7	4,863	Feb. 24, 1952
Richard King	IV-3	9,130	June 9, 1952
Mortimer R. Lewis	IV-2	11,130	July 9, 1952
Vernon S. Meissner	IV-4	7,563	Mar. 9, 1952
M. R. Parrish	IV-3	9,130	Apr. 3, 1952

Bureau of Reclamation, foreign assignments, fiscal year 1952—Calendar year, 1952—Continued

Country and name	Grade	Salary	EOD
Lebanon—Continued			
Lester A. Robb	IV-3	$9,130	Feb. 22, 1952
Leroy J. Snyder	IV-3	9,730	Aug. 24, 1952
David H. M. Strong	IV-4	6,963	Feb. 20, 1952
Genevieve Thomas	IV-6	4,719	June 15, 1952
William A. Thompson	IV-3	10,030	Mar. 16, 1952
Harold Weiland	IV-4	6,963	May 20, 1952
Robert F. Herdman	IV-1	12,800	Dec. 31, 1951
Ralph E. Winchell	IV-5	5,313	Aug. 24, 1951
J. D. Hancock	IV-3	9,730	Sept. 7, 1951

Report on foreign activities, fiscal year 1953 funds as of Feb. 28, 1953

Appropriation symbol	Unliquidated obligations carried forward July 1, 1952	Allotment	Total	Obligations incurred	Unliquidated obligations	Expenditures	Unobligated balance	Remarks
14–1121000, title I: Administrative expenses, MSA, executive (transferred from State to Interior), 1952.	$83,307.35	0	$83,307.35	0	$2,742.91	$80,564.44	0	
14–1121019, title II: Economic and technical assistance, neareast and Africa, MSA, 1952.	480,261.86	$40,000.00	520,261.86	$40,000.00	201,129.67	319,132.19	0	
14–118/21018, title III: Economic and technical assistance, Asia and Pacific, MSA, 1948–52.	56,394.93	0	56,394.93	0	14,293.56	42,101.37	0	
14X3901.435, working fund, Office of the Secretary, Costa Rica, Ecuador, Nicaragua, title IV.	18,808.43	59,275.00	78,083.43	49,973.00	48,320.90	20,460.53	$9,302.00	Allotments for Colombia and Costa Rica trainees. To be allotted to responsible offices.
14–1110051: Expenses, international development, Executive Office of the President (allotment to Interior), 1951.	49,170.00	0	49,170.00	6,218.00	31,977.99	23,410.01	0	
14–688/33422: Program expenses, Asia and Pacific, MSA (allocation to Interior, Reclamation), Apr. 3, 1948–53.	29,874.64	81,000.00	110,874.64	57,000.00	53,092.70	33,781.94	24,000.00	To be allotted to various Bureau offices for Wu Sheh storage project, Formosa.
14–688/33420(06): Program expenses, Europe, MSA (alloc tion to Interior, Reclamation), Apr. 4, 1948–53.	27,308.82	21,760.00	49,068.82	15,660.00	30,498.38	12,470.44	6,100.00	To be allotted to Denver for trainees from Turkey.
1433901.980: Working fund, Interior, Office of the Secretary, title I, 1953.	0	70,719.79	70,719.79	71,257.04	0	71,257.04	0	$36,115.30 anticipated reimbursements from Secretary's Office, fiscal year 1953.
142/33901.981: Working fund, Interior, Office of the Secretary, title II, 1952–53.	0	344,902.32	344,902.32	332,671.20	0	332,671.20	12,231.12	$136,888.41 anticipated reimbursements from Secretary's Office, fiscal year 1953.
148/33901.982: Working fund, Interior, Office of the Secretary, title III, 1948–53.	0	79,813.76	79,813.76	77,076.09	0	77,076.09	2,737.67	$42,184.94 anticipated reimbursements from Secretary's Office, fiscal year 1953.
Total	745,126.03	697,470.87	1,442,596.90	649,855.33	382,056.11	1,012,925.25	54,370.79	

Report on foreign activities, fiscal year 1952 funds as of June 30, 1952

Appropriation symbol	Unliquidated obligations carried forward July 1, 1951	Allotment	Total	Obligations incurred	Unliquidated obligations	Expenditures	Unobligated balance	Remarks
14–1121000, title I: Administrative expenses, MSA, executive (transferred from State to Interior), 1952	0	$190,277.00	$190,277.00	$190,277.00	$83,307.35	$106,969.65	0	
14–1121019, title II: Economic and technical assistance, Near East and Africa, MSA, 1952	0	746,453.00	746,453.00	746,453.00	480,261.86	266,191.14	0	
14–118/21018, title III: Economic and technical assistance, Asia and Pacific, MSA, 1948–1952	0	94,400.00	94,400.00	94,400.00	56,394.93	38,005.07	0	
14X3901.435: Working fund, Office of the Secretary, Costa Rica, Ecuador, Nicaragua, title IV	0	50,048.00	50,048.00	50,048.00	18,808.43	31,239.57	0	
14–1110051: Expenses, International Development, Executive Office of the President (allotment to Interior), 1951	$136,130.76	0	136,130.76	0	49,170.00	86,960.76	$6,218.00	
14–688/23422: Program expenses, Asia and Pacific, MSA (allocation to Interior, Reclamation), Apr. 3, 1948–52	41,850.00	56,770.00	98,620.00	56,770.00	29,874.64	68,745.36	0	Symbol changed to 14–688/33422 (fiscal year 1953).
14–688/23420(06): Program expenses, Europe, MSA (allocation to Interior, Reclamation), Apr. 4, 1948–52	46,849.92	37,268.57	84,118.49	37,268.57	27,308.82	56,809.67	0	Symbol changed to 14–688/33420 (fiscal year 1953).
14–19X8778(06).28: United States dollars advanced from foreign governments, United States information and educational exchange program, Department of State (transfer to Interior, Reclamation)	0	0	0	4,576.24	0	4,576.24	4,360.90	
14–6803404(06): Assistance to Republic of Korea, MSA (allocation to Interior, Reclamation), 1950	0	0	0	115.56	0	115.56	0	
Total	224,830.68	1,175,216.57	1,400,047.25	1,179,908.37	745,126.03	659,613.02	10,578.90	

CENTRAL VALLEY PROJECT, CALIFORNIA

TRANSMISSION LINE CONSTRUCTION

Mr. NORRELL. I have been trying to figure out on your map where your transmission lines extend. You used to have them marked in red, but you do not have them so marked this time.

Mr. MCPHAIL. No, sir; we do not have, Mr. Norrell, because there are no new transmission features starting. The red ones were the new items we were asking for, but, since we do not have any this year, none of them are marked in red.

Mr. NORRELL. You want one on both sides there.

Mr. LINEWEAVER. They are completed.

Mr. NORRELL. Are those in the budget this year?

Mr. MCPHAIL. They are completed, sir.

Mr. NORRELL. Where will those lines go, from where to where? Just briefly point that out with your stick.

Mr. MCPHAIL. There are 3 lines that come from the Keswick and Shasta powerplants, 2 of them running down the west side of the valley, and 1 down the east side of the valley. The one on the east side of the valley runs through Sacramento, and they come together again at Tracy switchyard.

Then there is another line now under construction from the Folsom and Nimbus powerplants that will connect with the east-side line at Sacramento or Elverta, which is in the suburbs of Sacramento.

We also have a line that runs along the Contra Costa Canal from the Tracy switchyard. Those cover the transmission lines that we have in the Central Valley project.

Mr. NORRELL. I thought you entered into a wheeling contract out there some years ago.

Mr. MCPHAIL. Yes, sir; we did.

Mr. NORRELL. Are these lines still necessary?

Mr. MCPHAIL. Yes, sir; these lines are still necesssary, sir.

They provide for delivery into the Pacific Gas & Electric Co.'s system which, in turn, performs a wheeling service for the Bureau at certain points. One point is at the Shasta substation of the Pacific Gas & Electric Co. near Redding on the north, and the other at the Tracy substation on the south.

From those points the company wheels power for the Bureau throughout its system making delivery at varying voltages from 230,000 volts down to lower voltages, to the various customers of the Bureau.

Mr. NORRELL. In other words, notwithstanding your wheeling contract those lines are necessary in order to deliver power to the utilities; is that right?

Mr. MCPHAIL. Yes, sir.

Mr. NORRELL. Do you have any feeder lines at all, except your main transmission lines?

Mr. MCPHAIL. Nothing with the exception of the line I mentioned a little while ago running along the Contra Costa Canal to the Tracy switchyard, in the vicinity of Tracy.

Mr. NORRELL. You are depending, then, on your wheeling contract to take care of the transmission of the power to the companies that serve your consumers?

Mr. McPHAIL. Yes, sir.

Mr. NORRELL. Now, is there not some way to get power down there without the Government going to this expense? Under your contract the Government has to do that, does it not?

Mr. McPHAIL. Someone had to build additional lines. These were under construction before we entered into any wheeling contract. They have been completed, and they are in service.

Mr. NORRELL. Will the utilities build lines, or do you know?

Mr. McPHAIL. Well, they are already constructed. Whether the utilities would have built them or not, they were constructed by the Bureau, and they are now in operation.

Mr. FENTON. If you will yield, Mr. Norrell, for years the utilities told us that they had lines, and that these lines were not necessary.

Mr. NORRELL. Is that the position they took?

Mr. FENTON. Yes; that is the position they took, but these lines were built anyhow.

Mr. NORRELL. Well, if it was necessary and, under the wheeling contract, the Government must build them then I do not see that there is much argument, but if the lines would be constructed by the utility that has the wheeling contract without making unfair charges to those they serve, I cannot understand the economic wisdom of the Government going to this expense.

Will you touch on that?

Mr. McPHAIL. Mr. Norrell, the wheeling service is not performed gratis. We pay for it and it involves a sizable amount of money. There is an increase in the operation and maintenance request for the fiscal year 1954 of $525,000 for this purpose.

Where you can get wheeling performed for a cost that is no more than it would cost the Government to build its own facilities, certainly it is economical to do it.

When the cost of wheeling becomes greater than the cost would be if the Government has its own facilities, it becomes an economic problem that I think should be considered in connection with such arrangements.

Mr. NORRELL. Well, will you get any more revenue from your power after you build those lines than you did before?

Mr. McPHAIL. Yes, in this way, you will have saved the payment that you have to make in order to cover the wheeling. The cost which the United States absorbs is up to the point where the wheeling costs do not exceed 1 mill per kilowatt-hour. When they get beyond that we require that the customer carry that extra cost.

WHEELING CONTRACTS

Mr. NORRELL. I believe you have put in the record the agencies that you have mentioned, and that you have contracts with?

Mr. McPHAIL. We have in past years. We have put in a list of all of the agencies with which we have wheeling contracts.

Mr. NORRELL. Will you outline for us the new contracts that you have executed this year with your customers for power to be delivered through wheeling contracts. Do you have a list of them like you had last year?

Mr. McPHAIL. I do not recall offhand, Mr. Morrell, that we have entered into any additional wheeling contracts over those that we had

last year, but I will be pleased to check and if there are any additional ones I will put them in the record.

(The matter above referred to follows:)

Status of Bureau of Reclamation negotiated contracts for transmission service, Central Valley project

PRIOR TO JULY 1, 1952

Name of contractor	Date of execution	Contract rate of delivery
Travis Air Force Base	Jan. 8, 1952	3,000
West Side Irrigation District	June 8, 1951	1,500
Navy, Port Chicago	July 18, 1951	1,000
Army, Benicia Arsenal	Aug. 27, 1951	3,500
Army, Sharpe General Depot (Lathrop)	do	930
Naval Air Station	do	2,500
Naval Supply Annex	do	5,000
Army, Camp Stoneman	Aug. 29, 1951	2,000
Castle Air Force Base	do	1,100
Mather Air Force Base	Oct. 1, 1951	2,100
Army, Sharpe General Depot (Tracy)	Oct. 9, 1951	750
JULY 1, 1952 TO DATE		
Parks Air Force Base	July 1, 1952	3,000
Provident Irrigation District	Aug. 5, 1952	400
Colorado River Commission of Nevada	Sept. 15, 1952	33,000
Plumas-Sierra Rural Electrification Co	Nov. 14, 1952	1,700
Deuel Vocational Institution	Dec. 9, 1952	[1]
Sacramento Municipal Utility District	Dec. 11, 1952	290,000
Princeton-Cadora-Glenn Irrigation District	Dec. 19, 1952	100
Folsom State Prison	Dec. 24, 1952	1,700
Reclamation District No. 2035	Jan. 27, 1953	1,100
Glenn-Colusa Irrigation District	Feb. 9, 1953	2,600

[1] 100 now; increase to 1,500.

Mr. NORRELL. I am told that you have this contract which is made with the Sacramento Municipal Utility District that has been recently executed, I believe.

Then you have the Glenn-Colusa Irrigation District contract. That was entered into on February 12, 1953. There is also a contract with the Princeton-Codora-Glenn Irrigation District. I believe that was entered into on December 19, 1952.

Then you have a contract with the Provident Irrigation District which was entered into in August 1952, also a contract with the West Side Irrigation District which was entered into on June 8, 1951; also the Plumas-Sierra REA Cooperative contract which was entered into on November 14, 1952, and a contract with Reclamation District No. 2035, which was entered into under date of February 13, 1953.

These seven public agencies during the calendar year 1951 used a total of 619,969,918 kilowatt-hours. Now, as I understand it, these concerns were supplied by the utilities before you secured those contracts.

Mr. MCPHAIL. That is correct. Those are all sales contracts.

Mr. NORRELL. Now, did you make or lose any money for the Central Valley project when these contracts were executed? Would you say, in other words, that you collect as much money from these concerns as they would have paid to have continued to get power as they were getting it prior to these contracts?

Mr. MCPHAIL. I could not give you the exact figures offhand on that. I think probably revenues will be just about the same. However,

these customers that you have mentioned are all in the so-called preference class. Under the law they will all achieve economies in the purchase of power.

Mr. NORRELL. I want to read this statement and let you answer. [Reading:]

I have been advised as follows: For this power the utility would pay, under its contract with the Bureau (based on an average rate of 4.4 mills per kilowatt-hour and adjusted for 5 percent transmission losses), $2,864,261.

Now, that is what the Bureau would have collected under the wheeling contract from the utility.

Now, I will quote further:

For the same power, the Bureau would receive a gross revenue under its contract with these public agencies the sum of $2,738,653. For each kilowatt-hour delivered to these agencies, the Bureau pays and absorbs 1 mill per kilowatt-hour as a wheeling charge, or a total of $619,970, leaving a net revenue for the project of $2,118,683. The total loss to the project per year, based on 1951 usage of these 7 agencies, is $745,578.

I would like for you to read that. That is a quotation from what has been written to me. I would like for you to tell the committee whether that is correct. You do not have to do it now, because you will have to study it.

Mr. MCPHAIL. We will. I am not familiar with the figures you have read. I do not know what they are.

(The information is as follows:)

The statement that "for this power, utility would pay under its contract (an average of 4.4 mills), adjusted for 5 percent loss, $2,864,261 (619,969,918 kilowatt hours). For the same power, Bureau would receive gross revenue from the public agencies: $2,738,653. But for each kilowatt-hour the Bureau pays and absorbs 1 mill per kilowatt-hour wheeling charge, or a total of $619,970, leaving a net of $2,118,683. The total loss to the project based upon 1951 usage of these 7 agencies is $745,587" is misleading both in factual information and conclusions.

The Bureau's contract with P. G. & E. Co. for transmission service became effective August 27, 1951. During the remaining part of 1951 the Bureau, in addition to wheeling small amounts of energy for project construction purposes, initiated service under sales contracts to 11 customers comprised of 10 Federal agencies and 1 irrigation district. In 1952, service was initiated to 1 additional Federal agency, 1 irrigation district, and 1 agency of the State of California. The kilowatt-hours actually supplied in each year to customers of the Bureau, the gross revenues from such sales, the wheeling charges absorbed, and other relevant data are shown in the following tabulation:

Central Valley project sales to public authorities

	1951	1952
Customers	11	14
Kilowatt-hours sold (firm)	47,395,999	123,114,496
Revenue	$215,220.03	$598,098.21
Average return per kilowatt-hour ..... mills	4.54	4.86
Wheeling charges to P. G. & E., at 1 mill per kilowatt-hour	$47,396.00	$123,114.50
Net revenue to United States after absorbing 1 mill per kilowatt-hour wheeling charge	$167,824.03	$474,983.71

While the above tabulation indicates a Bureau delivery (wheeling) cost of $47,396 in 1951 and $123,114.50 in 1952, the data do not reflect the appreciable savings to the United States by reason of the ability of the Federal agencies to purchase Central Valley project power at a cost considerably lower than it could be obtained from P. G. & E. Co. under its established rate schedules or other sources. The delivery expense of the Bureau via wheeling thus cannot be considered as a loss to the United States.

ADEQUACY OF POWER RATES

Mr. NORRELL. Now, did not the legislation authorizing the Central Valley project provide that the power should be sold—I assume at a reasonable rate—to help pay the cost of irrigation on the project?

Mr. MCPHAIL. Yes, sir; it certainly did.

Mr. NORRELL. If this loss is being sustained here, at least we are going the other way at this time, are we not? In other words, we are not getting the power we could get to help pay the irrigation project.

Mr. MCPHAIL. I do not believe, Mr. Norrell——

Mr. NORRELL. Is that correct?

Mr. MCPHAIL. The water users will pay an amount, set up by contract, within their ability to pay; and the power revenues pick up the balance of the cost.

Mr. NORRELL. Well, I trust that you will find that the statement is incorrect.

Now, I would like to ask you this question: Do you think that you are getting for the power in Central Valley as much as you reasonably should get to assist the farmers in their irrigation?

Mr. MCPHAIL. Yes, sir; I think so. Even if we were getting more revenues from power, Mr. Norrell, it should not affect the amount which the irrigators will pay. Under the reclamation law, irrigators are suposed to pay that amount which is within their ability to pay.

Mr. NORRELL. I have been told this, and I want to read it and get your answer. I will quote. [Reading:]

> The Bureau proposes to sell power to the seven agencies at a lesser rate than was quoted as necessary to repay the cost of the project in 1946. The cost of the project in 1946 was estimated at $318 million. The present justification now indicates the estimated cost at about $560 million. It is difficult to understand how the Bureau can quote a lower rate now than it quoted in 1946 when you have added $200 million to your project.

Do you need some study on that, or can you comment at this time?

Mr. MCPHAIL. The only comment that I can make on that, Mr. Norrell, is that the rates for sale of power were approved by the Secretary—I think some 3 years ago, perhaps 4—based upon a showing of the payout of the project on the basis of the rates established.

Mr. NORRELL. Did he not make a colossal misguess when he estimated in 1946 $380 million and set the rate of power at that time and later increased his cost from $380 million to about $580 million, going up $200 million? Then he brought the cost of the power down, and yet we know that the courts will take judicial knowledge of the fact that wages and materials have greatly increased since 1946. Instead of more of a charge you are charging less than you estimated in 1946, according to the information that I have.

Mr. MCPHAIL. Of course, we have added power facilities to the project by reason of the Folsom and Nimbus developments. I do not know whether your correspondent considered that in connection with the increased cost.

STATUS OF NEGOTIATIONS WITH UTILITIES FOR SERVICES

Mr. NORRELL. I do want you to put in the record all the agencies that you have contact with, the same as you did last year.

Mr. McPHAIL. We will be glad to give you a list of the projects.

Status of Bureau of Reclamation negotiations with utilities for transmission, firming, and standby power services

As of March 30, 1953, the status of existing contracts and negotiations for new contracts by the Bureau of Reclamation is shown in the tabulation below:

SUMMARY

Existing contracts providing wheeling for Bureau	25
Contracts under negotiation to provide wheeling for Bureau	10
Existing contracts under which Bureau wheels for others	33
Contracts under negotiation whereby Bureau would wheel for others	5
Existing contracts providing for purchase or interchange of power for standby and firming purposes	42
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	10

ARIZONA

Existing contracts providing wheeling for Bureau	3
Contracts under negotiation to provide wheeling for Bureau	0
Existing contracts under which Bureau wheels for others	10
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	4
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	0

CALIFORNIA

Existing contracts providing wheeling for Bureau	1
Contracts under negotiation to provide wheeling for Bureau	0
Existing contracts under which Bureau wheels for others	3
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	3
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	0

COLORADO

Existing contracts providing wheeling for Bureau	2
Contracts under negotiation to provide wheeling for Bureau	0
Existing contracts under which Bureau wheels for others	2
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	7
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	0

IDAHO

Existing contracts providing wheeling for Bureau	2
Contracts under negotiation to provide wheeling for Bureau	0
Existing contracts under which Bureau wheels for others	1
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	2
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	0

IOWA

Existing contracts providing wheeling for Bureau	2
Contracts under negotiation to provide wheeling for Bureau	1
Existing contracts under which Bureau wheels for others	0
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	2
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	1

MINNESOTA

Existing contracts providing wheeling for Bureau	0
Contracts under negotiation to provide wheeling for Bureau	3
Existing contracts under which Bureau wheels for others	0
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	0
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	3

MONTANA

Existing contracts providing wheeling for Bureau	1
Contracts under negotiation to provide wheeling for Bureau	3
Existing contracts under which Bureau wheels for others	1
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	3
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	3

NEBRASKA

Existing contracts providing wheeling for Bureau	1
Contracts under negotiation to provide wheeling for Bureau	3
Existing contracts under which Bureau wheels for others	1
Contracts under negotiation whereby Bureau would wheel for others	3
Existing contracts providing for purchase or interchange of power for standby and firming purposes	2
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	3

NEVADA

Existing contracts providing wheeling for Bureau	1
Contracts under negotiation to provide wheeling for Bureau	0
Existing contracts under which Bureau wheels for others	1
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	1
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	0

NEW MEXICO

Existing contracts providing wheeling for Bureau	1
Contracts under negotiation to provide wheeling for Bureau	0
Existing contracts under which Bureau wheels for others	2
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	4
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	0

NORTH DAKOTA

Existing contracts providing wheeling for Bureau	5
Contracts under negotiation to provide wheeling for Bureau	2
Existing contracts under which Bureau wheels for others	4
Contracts under negotiation whereby Bureau would wheel for others	1
Existing contracts providing for purchase or interchange of power for standby and firming purposes	4
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	2

SOUTH DAKOTA

Existing contracts providing wheeling for Bureau	4
Contracts under negotiation to provide wheeling for Bureau	2
Existing contracts under which Bureau wheels for others	5
Contracts under negotiation whereby Bureau would wheel for others	1
Existing contracts providing for purchase or interchange of power for standby and firming purposes	4
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	2

WASHINGTON

Existing contracts providing wheeling for Bureau	1
Contracts under negotiation to provide wheeling for Bureau	0
Existing contracts under which Bureau wheels for others	2
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchase or interchange of power for standby and firming purposes	1
Contracts under negotiations to provide for interchange or purchase of power for standby and firming purposes	0

WYOMING

Existing contracts providing wheeling for Bureau	2
Contracts under negotiation to provide wheeling for Bureau	0
Existing contracts under which Bureau wheels for others	1
Contracts under negotiation whereby Bureau would wheel for others	0
Existing contracts providing for purchases or interchange of power for standby and firming purposes	6
Contracts under negotiation to provide for interchange or purchase of power for standby and firming purposes	0

Wheeling contracts or equivalent

CONTRACTS IN EFFECT AS OF MAR. 30, 1953, BETWEEN THE DEPARTMENT OF THE INTERIOR AND CONTRACTORS LISTED BELOW

Date of contract	Contractor (Bureau of Reclamation)	Project	State	Wheeling service for United States over contractor facilities	Wheeling service for contractor over Bureau facilities	Purchase or interchange of power for standby and firming
Sept. 6, 1947	Pacific Power & Light Co	Yakima	Washington	Yes		Yes.
Dec. 15, 1950	Idaho Power Co	Minidoka	Idaho	Yes	Yes	Yes.
Do	do		Idaho	Yes		Yes.
Apr. 2, 1951	Pacific Gas & Electric Co	Boise	Oregon	Yes	Yes	Yes.
Mar. 1, 1948	Arizona Public Service Co	Central Valley	California	Yes	Yes	Yes.
Mar. 12, 1943	Bureau of Indian Affairs	Parker	Arizona		Yes	
Jan. 31, 1942	California Electric Power Co	do	do	Yes	Yes	
June 26, 1940	Imperial Irrigation District	do	do		Yes	Yes.
Dec. 15, 1950	Salt River Valley Water Users Association	do	California		Yes	Yes.
July 3, 1940	Tuscon Gas, Electric Light & Power Co	do	Arizona		Yes	
Oct. 1, 1948	Arizona Power Authority	do	do		Yes	Yes.
June 8, 1942	California Pacific Utilities Co	Davis	do		Yes	Yes.
Sept. 26, 1950	Imperial Irrigation District	do	do	Yes	Yes	
Oct. 1, 1951	Mohave Electric Cooperative	do	California		Yes	Yes.
Mar. 29, 1950	State of Nevada	do	Arizona		Yes	
May 29, 1941	Metropolitan Water District of Southern California	Boulder Canyon	Nevada		Yes	Yes.
June 1, 1945	Community Public Service Co	Rio Grande	Arizona	Yes		
Mar. 16, 1940	El Paso Electric Co		Nevada			
July 31, 1950	Public Service Co. of New Mexico	do	New Mexico			Yes.
Jan. 1, 1950	Mountain States Power Co	do	do			Yes.
Jan. 29, 1948	Marias River Electric Cooperative	Riverton-Shoshone	do		Yes	Yes.
Aug. 24, 1949	McCone County Electric Cooperative	Fort Peck	Wyoming	Yes	Yes	Yes.
Apr. 11, 1945	Montana-Dakota Utilities Co	do	Montana			Yes.
		do	do			Yes.
Jan. 24, 1951	Montana Power Co	do	Montana	Yes	Yes	Yes.
Aug. 6, 1946	do	do	North Dakota			
Oct. 10, 1951	Central Power Electric Cooperative	do	South Dakota			
Mar. 14, 1950	do	Missouri	Montana	Yes	Yes	Yes.
Dec. 18, 1950	East River Electric Power Cooperative	do	do			Yes.
Apr. 26, 1950	Northwestern Public Service Co	do	North Dakota		Yes	Yes.
July 31, 1951	Oliver-Mercer Electric Cooperative	do	do	Yes	Yes	Yes.
Mar. 14, 1950	Ottertail Power Co	do	South Dakota	Yes	Yes	
Dec. 28, 1950	Rosebud Electric Assn	do	do	Yes		Yes.
Jan. 10, 1951	Rushmore G. & T	do	North Dakota	Yes	Yes	
Apr. 17, 1951	Verendrye Electric Cooperative	do	do		Yes	
			North Dakota	Yes		

Wheeling contracts or equivalent—Continued

Date of contract	Contractor (Bureau of Reclamation)	Project	State	Wheeling service for United States over contractor facilities	Wheeling service for contractor over Bureau facilities	Purchase or interchange of power for standby and firming
Aug. 19, 1941	Consumers Public Power District	North Platte	Nebraska			Yes.
Apr 1, 1950	Cheyenne Light Fuel & Power Co	Kendrick	Wyoming			Yes.
May 15, 1950	Mountain States Power Co	do	do	Yes		Yes.
Mar. 31, 1950	Rawlins Electric Co	do	do			Yes.
Jan. 17, 1951	Southern Wyoming Utilities Co	do	do			Yes.
Sept. 1, 1950	Western Public Service Co	do	do			Yes.
July 20, 1949	City of Fort Morgan	Colorado-Big Thompson	Colorado			Yes.
Apr. 13, 1949	City of Longmont	do	do			Yes.
Aug. 18, 1948	City of Loveland	do	do	Yes	Yes	Yes.
Aug. 18, 1951	Public Service Co. of Colorado	do	do	Yes	Yes	Yes.
Aug. 1, 1951	do	do	do			Yes.
Apr. 25, 1949	Y-W Electric Association	do	do			Yes.
Apr. 30, 1952	Bonneville Power Administration	Yakima	Washington		Yes	
Dec. 4, 1952	Big Bend Electric Cooperative	Columbia Basin	do		Yes	
Apr. 25, 1952	Bureau of Indian Affairs	Davis	Arizona		Yes	Yes.
Aug. 20, 1952	California Pacific Utilities Co	do	do		Yes	
May 21, 1952	Plains G. & T. Cooperative	Rio Grande	New Mexico	Yes	Yes	Yes.
Aug. 1, 1952	Consumers Public Power District	Missouri	Nebraska	Yes	Yes	Yes.
Aug. 6, 1952	Northwest Iowa Power Cooperative	do	Iowa	Yes		Yes.
May 19, 1952	L. & O. Power Cooperative	do	do	Yes		Yes.
Jan. 2, 1952	Public Service Co. of Colorado	Colorado-Big Thompson	Colorado			Yes.

CONTRACTS UNDER NEGOTIATION

Baker Electric Cooperative	Missouri	North Dakota	Yes	Yes	Yes.
Black Hills Power & Light Co	do	South Dakota	Yes	Yes	Yes.
Border Counties Power Cooperative	do	Minnesota	Yes		Yes.
Central Electric & Gas Co	do	South Dakota	Yes	Yes	Yes.
Minnkota Electric Cooperative	do	North Dakota	Yes		Yes.
Rural Cooperative Power Association	do	Minnesota	Yes		Yes.
Rushmore G. & T	do	South Dakota	Yes		Yes.
Corn Belt Power Cooperative	do	Iowa	Yes		Yes.
Nebraska Public Power District	do	Nebraska	Yes	Yes	Yes.
Omaha Public Power District	do	do	Yes	Yes	Yes.

ESTIMATE OF COST

Mr. NORRELL. Now, with regard to this matter that we had under discussion yesterday, I am going to revise the record. I think the engineers must have something on that.

In that connection, when you started out on the project, you estimated that it would cost $170 million. It has been going up and up and up. Now, you estimate a project, and I assume that in order to sell it to the people you want the estimate as low as possible so they will take it, and then if you cannot construct the project for that amount of money and the people will not execute a contract like you want, the Government is going to have to lose it.

I do not believe that you need any people on the payrolls in California to go out and sell the power to the consumers under the wheeling-contract arrangement, and I do not believe you need anybody under your employment that will go out and try to sell a project to the people. I read the findings in this case last night, and the reason you lost that case was because the Reclamation Service, in order to get the people to create the district and to go ahead and let the Reclamation people construct the project, advertised all over the State that the project under no circumstances would cost those people in excess of $13,500,000. You executed a contract in which you said that under no circumstances would it cost more than $13,500,000.

The court found in the advertisements and in public statements that for many months before the contract was executed it was said by the Interior Department that under no circumstances would it cost more than $13,500,000. The State of California approved the contract with the understanding that it would not cost more than $13,500,000. Everytime anything was said about it, you guaranteed them that it would not cost more than that much money. But when you went to make the last contract, why, it was more, and now the court says that you just have to stay by your contract, and that is all.

I guess the court is right, I do not know. I do not know where you will stand if they hold you to your promise on the Central Valley.

That is all, Mr. Chairman.

Mr. LINEWEAVER. May I just say with respect to the comment that you made with respect to the attorneys, I thoroughly agree with your observation today.

I would like to say this, that the lawyers, the present Chief Counsel, Edward W. Fisher, who was not Chief Counsel at the time that contract was executed, was doing his job as he saw it, as the chief legal adviser of the Bureau, and with the approval of the former Solicitor, these proceedings were instituted. I think that I can say that we laymen regard Mr. Fisher as a very able, conscientious, hard-working lawyer.

Mr. NORRELL. Let me ask you this question. Why was it then—and I grant you that the lawyer carried out his instructions—that you said to those people all through the time this was under consideration that the project under no circumstances would cost more than $13,500,000?

Mr. LINEWEAVER. Only for the purpose of clarification, Mr. Norrell, the Bureau did not participate as such in that campaign to get the contract approved. The Bureau did recommend approval of the contract, as you have stated, and the Secretary executed it, but we

did not have a part in the advertisements. They quoted it, but the campaign was conducted by the water district. Based on the contract, you are correct on that.

Mr. NORRELL. You will admit that the court found that everybody said that the contract would cost $13,500,000.

Mr. LINEWEAVER. That is correct.

Mr. NORRELL. The Reclamation people did that; did they not?

Mr. LINEWEAVER. As I said, the Bureau recommended that contract for execution by the Secretary on the estimate that was then presented, that it would cost $13,500,000. That is the repayable portion of it.

Mr. NORRELL. That will be the amount to be paid by the people. Actually, there was a flood-control item of over $4,500,000 that was canceled out.

Mr. LINEWEAVER. Yes, sir.

Mr. NORRELL. I think that the engineers, after reading the decision of the court, are more responsible than the lawyers. I got it wrong yesterday. How could you say to the people there before the project ever was started, while you were trying to sell it to them, that if you go ahead and do this and sign the contract it will not cost you more than $13,500,000 when you know, Mr. Lineweaver, that you could not tell at that time to the penny what a project like that was going to cost?

Mr. LINEWEAVER. I agree with what you have said, Mr. Norrell. The best estimate we had from the engineers at that time was that it would not cost in excess of $13,500,000 for the repayable amount.

Mr. NORRELL. When you authorized your attorney to write a contract, why do you not provide that that is an estimate, but that anything in excess of that must be paid by the water users? Be honest with them.

Mr. LINEWEAVER. I think you will find subsequent contracts, especially those in the Central Valley area, do protect the Bureau and the Government against the very point that Judge Westover found was the fault.

Mr. NORRELL. You certainly ought to be able to write a contract that will protect the Government in wage increases and price increases and material increases. Now, when it comes to taking money from this project and using it somewhere else, I do not think that you can be justified in doing that at all, but wage increases and increases in the price of materials, and so forth, ought to be taken care of in these contracts in some way. That is not the responsibility of the attorney, as I said yesterday.

That is all.

Mr. JENSEN. In that connection, I think that every member of this committee that was a member in the year 1948 will recall Mastin White, the Solicitor of the Interior Department. He came before the committee and testified to the effect that only 6 attorneys in the Department were under his jurisdiction and that all the others—and I cannot remember how many, but as I remember, over 100—were not required to clear any matter of that nature, or any other legal matter, with him.

If you will remember, Mr. Norrell, we wrote language in the bill which placed every attorney of the Interior Department under the supervision of Mr. Mastin White, in whom we had great confidence. I have been told very officially that so long as Mastin White had that

authority, which he had only about 1 year, matters of this nature were handled in the proper manner. But it was not long, as you know, until that responsibility was again taken away from Mastin White.

A lot of people in and out of Government, who know him well, hold him in the highest regard as an attorney, but he was sheared of his power. For what reason I do not know. I have my ideas. These other attorneys in the Department did not seem to get into the meat of a number of these problems, and so we have had these things happen.

Mr. LINEWEAVER. I would like to submit for the record, Mr. Chairman, not that I want to prolong the argument, but I do happen to know that in this case, first, that this was not a question of selling the Coachella Distribution to the Coachella Valley Water District because they wanted the water. I think, Mr. Chairman, you will recall we worked very diligently to arrive at some way by which this could be financed. Secondly, with respect to the responsibilities between the chief counsel of the Bureau of Reclamation and the Solicitor of the Department, so far as I know, there has been no repayment contract submitted to the Secretary for approval that did carry the stamp of approval of the Solicitor's Office under appropriate delegation of authority.

Now, I am merely stating that for the record without any attempt to enter into the controversy as to what authority the former Solicitor had over the attorneys in the Bureau of Reclamation, or elsewhere in the Department.

ADEQUACY OF SOIL SURVEY AND LAND CLASSIFICATION

Mr. JENSEN. Now, one more matter pertaining to the Central Valley. Under date of August 27, 1952, you, Mr. Lineweaver, sent a memorandum to the Secretary of the Interior as Acting Commissioner of Reclamation, and the subject was: Certification as to adequacy of soil survey and land classification as required by the 1953 appropriation act, Sly Park unit, Central Valley project, California.

The Interior Department appropriation for the fiscal year ending June 30, 1953 (Public Law 470, 82d Cong., 2d sess.) contains under heading "Bureau of Reclamation, construction and rehabilitation," the following provisions:

"That no part of this or any other appropriation shall be available for the initiation or construction under the terms of reclamation law of any dam or reservoir or water supply, or any tunnel, canal, or conduit for water, or water distribution system relates to such dam or reservoir, until the Secretary shall certify to the Congress that an adequate soil survey and land classification has been made and that the lands to be irrigated are susceptible to the production of agricultural crops by means of irrigation."

Now, turning to the second page, I read as follows:

In order to select the lands within the area which will be served most efficiently, consistent with soils, topography, drainage, and available water, it was necessary to classify considerably more lands than will ultimately be irrigated under the project. A total of 32,430 acres were classified as follows:

Total area, class 2, 465
Total area, class 1 (2s), 9,155
Total area, class 4 (3s), 11,880
Total area, class 6, 9,650
Total area, ROW, so forth, 1,280.

The survey was initiated in 1945 and completed in 1950. The field work was accomplished on aerial photographs having a scale of 1 inch equals 800 feet. The

land classification data were used in determining water requirements, land development requirements, project feasibility, payment capacity, and land use for these units.

The class 2 lands are suitable for general cropping. The class 4 lands are a special class of land with severe topography limitations, but suitable for the production of deciduous fruits or use as pasture. They were segregated into two subclasses differing with respect to the severity of the restrictions.

That is signed by Mr. G. W. Lineweaver, Acting Commissioner.

Now, it would appear from this letter relating to class of land that a major part of the land in the Sly Park unit was of a very low grade, only 465 acres being in class 2. And in class 4, both 2's and 3's, the total acreage is over 20,000. And then in class 6, 9,000.

How could the Department by any stretch of the imagination find that that land was feasible for irrigation and for which we are now requested to appropriate $3,032,737 in this bill?

Mr. LINEWEAVER. Gentlemen, I can explain that briefly, and then I will be glad to supply more detailed explanation.

Mr. JENSEN. All right.

Mr. LINEWEAVER. That class 4 land, under those 2 classifications, is largely suitable for orchards and a great deal of it is in orchards.

Mr. JENSEN. Can it be irrigated?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. It is pretty level?

Mr. LINEWEAVER. No; it is sloping.

Mr. JENSEN. Of course, we can irrigate hilly land.

Mr. LINEWEAVER. They have been irrigating this land for many years with an inadequate water supply.

I will be very glad to submit a more detailed explanation of it if you desire. Under the soil survey procedures first, and then the land classification, right or wrong, the soil experts and the land classification experts set out those classifications. It is required, and understandably so, that land that is steep or is sloping, must go into a different classification than that which is more or less level. This land, as I understand it, has been irrigated for some years, and when they have water they are highly productive.

Mr. JENSEN. When they have the moisture, you mean by that when they have the water from irrigation.

Mr. LINEWEAVER. Yes, sir; stabilized moisture for the production of fruits.

Mr. JENSEN. Are these crops growing on this land at the present time?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. It is in a well established orchard area?

Mr. EATON. Yes, sir. It is one of the choice soft fruit areas of north central California. Pears, for example, are packed and shipped from there and they are known all over the country for their quality. They have their own special brands and labels.

Mr. JENSEN. At first glance this land classification would naturally create some doubt in one's mind as to the feasibility of such low-grade land.

Mr. LINEWEAVER. I would like to say right there with respect to that land classification proviso that we have leaned over backwards in complying with its provisions which was written in, as you recall, by the Senate Appropriations Committee. I would like to say this further, that we followed the letter of the proviso to such an extent that we have been warned that we were going too far with respect

to applying the requirement to land that had been irrigated for many years.

Mr. JENSEN. Of course, I think that they are entirely wrong for the very simple reason that we have many valleys in the West where the soil has every element for production and all it needs is water. That is why we do not want at this stage in the history of our country to spend so much money on the irrigation and reclamation of what we call scab land. That kind of land no doubt will have to be reclaimed in future years when our population becomes much greater than it is today. We should not spend a lot of money reclaiming and irrigating the worst land that we have in this country before we irrigate the best, which can produce greater crops and bring greater revenues to the people. I think the department is entirely justified in seeing to it that we first reclaim and irrigate the most suitable lands that we can, because they can be reclaimed and irrigated for considerably less money per acre, and we can derive greater wealth per acre from them.

Mr. LINEWEAVER. I would just like to add this point so there may not be any misunderstanding about the Sly Park area.

Class 4 land is not necessarily low grade from a production viewpoint. It is land that is adaptable to special crops, as Mr. Eaton has pointed out. I think the El Dorado fruit that is packed around El Dorado and the Sly Park area is nationally known.

Mr. JENSEN. I can understand that because of the very fact that in those great bleak bluffs running along the Missouri River from Sioux City south possibly 100 miles, or 150 miles, there are grown the finest Concord grapes with the finest flavor of any grape. Of course it so happens that a big portion of that is in my own district, and that is not why I am bragging about that. But I can understand why you can have good fruit produced even on hilly ground.

Mr. LINEWEAVER. I think in Mr. Budge's State of Idaho you find the same thing on your irrigated slopes. Some of the best apples in Idaho are found on those slopes.

Mr. JENSEN. I am going to tell you something, since you are talking about apples: Did you know that the State of Iowa produces more apples than the State of California? Would you believe that?

Mr. LINEWEAVER. If you tell me that, I believe it.

Mr. JENSEN. It is the truth.

(Discussion off the record.)

Mr. BUDGE. That reminds me of something which I mentioned yesterday to the chairman during the testimony of the witnesses.

It was my understanding on yesterday that the investigations to be conducted by the Bureau would not necessarily be limited to the items which were shown in the justifications and in discussing that later with some of the representatives of the Bureau, it was felt that it would be wiser if I had a particular project which I wanted the Bureau to investigate, to include it by name.

The Bureau has scheduled for this year the Mountain Home division, the Hillcrest unit, the Snake River Basin, the Hillcrest unit extension.

I have been working in conjunction with Mr. Glenn Sloan; that is, I have discussed with him a plan which he has evolved, which may be an excellent Bureau project and I would simply like the record to show that the project will probably be turned over to the Bureau for further investigation.

Is there anything further that would be necessary in order that the Bureau could go ahead with the investigation? In most respects it includes the projects which are already included?

Mr. LINEWEAVER. You are correct, I would think, Mr. Budge, that those general areas that you mentioned are included, or would include the units that you spoke of, but there would be no objection whatever, so far as the Bureau is concerned, to you, in the committee report, naming exactly what you wanted done, and, also, provided, of course, to see that we were provided with the funds to do the job.

Mr. BUDGE. I did not quite understand the first part, but I got that last statement all right.

Mr. LINEWEAVER. With respect to the Mountain Home proposition, next Monday the Assistant Secretary, Mr. Aandahl, is going to have a conference with Bureau people from Idaho who will be here in connection with this matter.

Mr. BUDGE. I wanted to have it understood here that your program of investigations was not to be so inflexible that you cannot investigate a slightly different plan than the Bureau now has in mind?

Mr. LINEWEAVER. The procedure is that we would adhere to that, unless there were any changes and unless we are directed by the Congress to deviate from that program and it would have to be approved by the Secretary. That is the usual procedure, but if in the committee report we are asked to give attention to some particular areas, and we had the funds, we would certainly work on it and that would be considered a modification of the program.

Mr. BUDGE. Am I to understand that on this matter of funds you are again going to try and limit it to the projects which you have designated? That is contrary to what was indicated yesterday.

Mr. LINEWEAVER. We have so much money, and it would depend upon how we come out with funds, finally, when the bill is passed and then we have to take a second look at the program.

Mr. BUDGE. I do not want to drag this out any further, Mr. Chairman, but I do want the committee to know that this investigation is going to be requested as a means of irrigating the Mountain Home Desert, which, incidentally, has some of the best land in the United States and has the available water supply, and any plan which can bring about that irrigation should be investigated, whehter it happens to originate with the Bureau of Reclamation or somewhere else. In this instance, it originated with the coauthor of the Pick-Sloan plan, which was adopted for the Missouri River. I do not want the Bureau to take the position they cannot go outside of the matters that they have scheduled in their own program.

Mr. LINEWEAVER. I think you will find that the Mountain Home development will be looked at. In fact, we have made studies of the Mountain Home area and are pretty well acquainted with it.

Mr. JENSEN. May I say in that connection that it was my privilege several years ago to take a good look-see at the Mountain Home proposed project and I was greatly impressed with that project, and with the people. The people from every walk of life seemed to take an interest in the development of that area, and from my own observation, I felt it was one of the better projects that was under consideration for reclamation and irrigation. I say that in all honesty. I have said it before, even before Mr. Budge became a member of this committee, and I certainly hope that proper investigation and other work can be taken regarding the Mountain Home project.

IRRIGATION PROJECT

Mr. LINEWEAVER. I have a statement on the Central Valley irrigation project operation and maintenance which I would like to place in the record.

Mr. JENSEN. Without objection, it will be inserted at this point.

(The matter referred to follows:)

OPERATION AND MAINTENANCE, CENTRAL VALLEY PROJECT, CALIFORNIA

IRRIGATION

A general description of this project has been included in the statement on construction previously submitted.

The first full operation of the initial features of the project was observed in August 1951; and when this multipurpose project is in full operation, it will provide water for the irrigation (excluding irrigation available from American River development) of approximately 237,500 acres of new irrigable land and a supplemental supply for approximately 810,000 acres of presently irrigated land having an inadequate supply. Of this total area, approximately 566,000 acres will be capable of being furnished water during fiscal year 1954 through facilities constructed by the Bureau of Reclamation. The project also provides water for industrial and municipal purposes; provides flood control on the Sacramento and San Joaquin Rivers; provides for navigation on the Sacramento River to Chico Landing; provides salinity control in the Sacramento-San Joaquin Delta; and affords excellent opportunities for recreation at Shasta and Millerton Lakes, the two principal reservoirs.

As of January 15, 1953, long-term water service contracts for Central Valley project water had been executed with 20 districts, and contract negotiations were in various stages of completion with an additional 25 other districts. Amendatory contracts had been executed by 4 districts increasing the maximum contract liability under which the United States is constructing distribution systems. Other contracts are in the process of negotiation.

Funds in the amount of $1,989,045 are requested to provide for operation and maintenance during fiscal year 1954 of all features of the Central Valley project other than power features. Of this total amount, $1,573,654 will be required for irrigation and $186,195 for municipal water, while $159,337 is allocated to flood control and $69,859 to navigation.

POWER FACILITIES

A general description of this project is contained in the construction statement previously furnished this committee.

Of the total requested funds for operation and maintenance of the Central Valley project in fiscal year 1954, an allotment of $2,619,368 is requested for operation and maintenance of the electrical features of this project and the cost of operating the multipurpose facilities that are charged to power. The principal electrical features of the Central Valley project are the Shasta and Keswkick powerplants with an installed generating capacity of 379,000 and 75,000 kilowatts, respectively, 543 miles of transmission lines, and 8 substations.

The funds requested in fiscal year 1954 represent an increase of $1,078,922 due to the following principal reasons:

(1) An increase of $525,370 in wheeling charges.

(2) The rewinding of a generator at Shasta powerplant at an estimated cost of $300,000. This machine has needed rewinding for the past year and any delay would seriously increase the risk of losing the production of this machine.

(3) Replacing of wood poles that are in need of replacement.

(4) An increase of 7 miles of transmission lines and 1 new substation being placed in operation.

(5) Wage board increases allowed since presentation of last budget request.

CONSTRUCTION AND REHABILITATION

KERN RIVER PROJECT, CALIFORNIA

Mr. JENSEN. We have a $10,000 request for the Kern River project. We will place in the record at this point pages 23 and 24 of the special data on this project and pages 339–341 of the justification.

(The matter referred to follows:)

CONSTRUCTION

Expenditures:	
Actual as of June 30, 1952	$67,133
Estimated 1953	40,452
Estimated 1954	10,000

HISTORY OF PROJECT DEVELOPMENT

Location

Kern River flows south from the northeastern portion of Tulare County, Calif., in the Sierra Nevadas, and continues southwest through Kern County to the city of Bakersfield, Calif.

Purpose

The project will be operated for the multiple-purposes of irrigation, flood control, and power generation. Isabella Reservior, now under construction by the Corps of Engineers, with a capacity of 550,000 acre-feet, will store water for irrigation of a water-deficient area, and will provide flood control in the vicinity of Bakersfield. In addition, existing and potential hydroelectric power sites will be improved. The Bureau of Reclamation is charged with the responsibility of making studies to establish the allocation of the capital cost of the project to its various functions and develop a base upon which a repayment contract can be negotiated.

Authorization

Construction of Isabella Dam by the Corps of Engineers was provided in the Food Control Act of December 22, 1944 (58 Stat. 887), which stipuates that disposition of water from Isabella Dam for irrigation purposes will be subject to Federal reclamation laws.

Initial Date:

Planning November 1940.

Advanced planning for economic investigations and repayment contract negotiations in fiscal year 1949.

Construction of Isabella Dam by Corps of Engineers in March 1948. (No construction by Bureau of Reclamation.)

Date of functional completion of program, fiscal year 1955.

Fiscal year and amount of initial allotment of appropriations, fiscal year 1949, $42,500.

COSTS

Original estimated cost	$125,000
Allocation of cost: Irrigation	125,000
Present estimated cost [1]	135,000
Allocation of cost: Irrigation	135,000

[1] Cost of Bureau of Reclamation economic repayment water right and land-use investigations, power studies, and repayment-contract negotiations in connection with Isabella Dam, construction of which by the Corps of Engineers is scheduled for completion in fiscal year 1953.

REPAYMENT

Status of repayment contract negotiations:

A cost allocation report scheduled for completion in fiscal year 1953 will provide basis for discussion with Corps of Engineers concerning repayment of reimbursable costs of Isabella Dam pursuant to Federal reclamation laws.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$135,000
Total obligations to June 30, 1952		67,133
Prior year balance available	$40,452	
Total obligations, fiscal year 1953		40,452
Allotment, fiscal year 1954	10,000	
Total obligations, fiscal year 1954		10,000
Balance to complete		17,415

JUSTIFICATION OF ESTIMATE

Authorization

Construction of Isabella Dam by the Corps of Engineers was provided in the Flood Control Act of December 22, 1944 (58 Stat. 887), which stipulates that disposition of water from Isabella Dam for irrigation purposes will be subject to Federal reclamation laws.

Location

Kern River is the southernmost major stream entering the great Central Valley of California. It flows south from the northeastern portion of Tulare County, Calif., in the Sierra Nevadas, and continues southwest through Kern County to the city of Bakersfield.

Description

The project will be operated for the multiple purposes of irrigation, flood-control, and power generation. Isabella Reservoir, with a capacity of 550,000 acre-feet, will store water for irrigation of a water-deficient area, and will provide flood control in the vicinity of Bakersfield. In addition, existing and potential hydroelectric power sites will be improved.

Repayment

A cost allocation report scheduled to be completed during fiscal year 1953 will constitute the basis for discussion with the Corps of Engineers relative to repayment of reimbursable costs of the project.

Status

Construction of Isabella Dam was commenced by the Corps of Engineers on March 16, 1948. Completion of the dam is scheduled for fiscal year 1953. Land use, economic, water supply, and power studies are being carried out for purposes of preparation of a cost allocation report. Work pertaining to water rights of lands adjacent to or diverting from the Kern River is being pursued.

Work proposed, fiscal year 1954

The program for fiscal year 1954 provides for continuation of the repayment studies and repayment contract negotiations.

Justification

Though the Kern River area is highly developed for irrigation purposes, the present water supply is inadequate. Storage regulations by the reservoir will increase the amount of irrigation water available from the presently unregulated Kern River, reducing intensity and cost of ground-water pumping. Expansion of irrigated acreage may also be possible, such as in the water-deficient Arvin-Edison area. In order to utilize the project upon completion of the construction work, and to insure the return to the United States of reimbursable costs, contracts must be negotiated for repayment of costs allocable to irrigation benefits.

Schedule of construction program' fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Isabella Dam and Reservoir [1]					
Total cost	$135,000				$135,000
Project investigations		$67,133	$40,452	$10,000	−117,585
Total expenditures	135,000	67,133	40,452	10,000	17,415
Total obligations	135,000	67,133	40,452	10,000	17,415
Method of financing:					
Prior-year balance available			40,452		
Allotments required				10,000	17,500

[1] Under construction by Corps of Engineers.

Mr. LINEWEAVER. I have a statement on the Kern River project, California.

(The statement referred to follows:)

STATUS OF REPAYMENT NEGOTIATIONS—KERN RIVER PROPECT, CALIFORNIA

The Kern River is located in the southern end of San Joaquin Valley and provides water primarily to lands in Kern County except that in certain years of high water flow some water is diverted to Tulare Lake in Kings County.

Isabella Dam was authorized for construction on the Kern River by the Corps of Engineers by Public Law 534, 78th Congress, known as the Flood Control Act of 1944. The finding of feasibility is published as House Document 413, 78th Congress, 2d session. This document recommended immediate construction of Isabella Dam and provided that the Corps, with the assistance of the local interests and the Bureau of Reclamation should determine the conservation benefits after the facilities have been placed in operation and that repayment arrangements should then be made.

Construction of the dam began 4 years ago. In the spring of 1952 the Corps of Engineers began actively to work toward a cost allocation report. Since that time a series of meetings have been held in which the Bureau of Reclamation, the State of California, and interested local groups have participated. It is anticipated that the report will be completed early in 1953.

In accordance with the Flood Control Act of 1944, the Bureau of Reclamation will be responsible for obtaining repayment to the United States for the portion of the costs allocated to conservation. Negotiation will not be started until the cost allocation report is approved. Operation of Isabella Dam affects the negotiations with districts in Kern County for Central Valley project water.

CONSTRUCTION AND REHABILITATION

KINGS RIVER PROJECT, CALIFORNIA

Mr. JENSEN. The next item is the Kings River project for which you have a request of $2,000.

We will insert at this point in the record the data contained on pages 25 and 26 of the summary sheets, and pages 343–345 of the justification.

(The matter referred to follows:)

CONSTRUCTION

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$175,222	$9,000	$4,324

HISTORY OF PROJECT DEVELOPMENT

Location

Fresno County, 27 miles east of Fresno, Calif.

Purpose

Irrigation, power production and flood control. Project being constructed by United States Army engineers. The Bureau's participation is confined to studies and negotiations in connection with the repayment contract.

Authorization

Flood Control Act of December 22, 1944 (57 Stat. 887).

Initial date

Planning, 1937.

Advance planning, 1947.

Construction of Pine Flat Dam on Kings River by Corps of Engineers in May 1947. (No construction by Bureau of Reclamation.)

Date of functional completion of construction, fiscal year 1955.

Fiscal year and amount of initial allotment of appropriations for construction, 1947, $100,000.

COSTS

Original estimated cost	$200,000
Allocation of cost irrigation	200,000
Present estimated cost [1]	300,000
Allocation of cost irrigation	300,000

[1] Bureau of Reclamation cost of economic and other investigations and negotiation of repayment contracts in connection with Pine Flat Dam which is being built by Corps of Engineers and scheduled for completion in fiscal year 1953.

REPAYMENT

Status of repayment contract negotiations: Repayment contract negotiations have been undertaken with Kings River water user organizations in connection with the return to the United States of the reimbursable costs of construction of Pine Flat Dam. The cost allocation report prepared by the Corps of Engineers in 1946 showed a total estimated cost of $36,429,000 of which not to exceed $14,250,000 was assigned for repayment by irrigation. Repayment negotiations have been under way for nearly 6 years, and numerous differences still remain for resolution if a suitable repayment contract is to be negotiated.

Amount to be repaid and repayment period: Contract under negotiation.

Repayment of costs allocated to irrigation: Water users, total not to exceed $14,250,000.

Repayment costs per acre:

Federal investment per acre, $15.

From irrigation, $15.

Annual water user charges: Total annual water charges related to Pine Flat Dam are expected to average less than $1 per acre.

Income per acre resulting from project irrigation, not available.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$252,764
Total obligations to June 30, 1952	175,222
Prior-year balance available	11,324
Balance available in subsequent year	—2,324
Total obligations, fiscal year 1953	9,000
Allotment, fiscal year 1954	2,000
Prior year balance available	2,324
Total obligations, fiscal year 1954	4,324
Balance to complete	64,218

JUSTIFICATION OF ESTIMATE

Authorization

Construction of Pine Flat Dam by the Corps of Engineers was provided in the Flood Control Act of December 22, 1944 (57 Stat. 887), which provides that disposition of water from Pine Flat Dam for irrigation purposes will be subject to reclamation laws, including repayment arrangements for return of reimbursable construction costs.

Location

Pine Flat Dam of the Kings River project is located in Fresno County about 27 miles east of the city of Fresno, Calif.

Description

The project is designed for the multiple purposes of irrigation, flood control, and power production. Storage in Pine Flat Reservoir will reduce the intensity of groundwater pumping, as well as generally augment the water supply of the area. It will also provide flood protection to areas subject to inundation by Kings River overflows.

Repayment

As indicated in House Document 136, 80th Congress, 1st session, $14,250,000 of the project cost is allocable to irrigation and must be repaid by the water users. Water service contract negotiations have been actively pursued with the Kings River Water Association, but no contract has as yet been consummated. Both the association and the Bureau of Reclamation have submitted contracts reflecting their requirements.

Status

Construction of Pine Flat Dam was commenced by the Corps of Engineers on May 28, 1947. Completion of the dam is scheduled for fiscal year 1953. Water use and economic surveys are being carried out in connection with the allocation of reimbursable costs of the project. Negotiations for a water service contract are also being continued.

Work proposed, fiscal year 1954

The program for fiscal year 1954 provides for continuation of the repayment studies and repayment contract negotiations.

Justification

In order to utilize fully the potentials of the project upon completion of the construction work, and to insure the return to the United States of reimbursable costs, contracts must be negotiated for repayment of costs allocable to irrigation benefits.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
CONSTRUCTION PROGRAM					
Pine Flat Dam (under construction by Corps of Engineers): Total cost	$300,000				$300,000
Project investigations		$221,252	$10,230	$4,300	−235,782
Transfers, credits, and other expenditures	−47,236	−46,030	−1,230	24	
Total expenditures	252,764	175,222	9,000	4,324	64,218
Total obligations	252,764	175,222	9,000	4,324	64,218
Method of financing:					
Prior year balance available			11,324	2,324	
Balance available in subsequent year			−2,324		
Allotments required				2,000	64,200

Construction program

STATUS OF REPAYMENT NEGOTIATIONS

Mr. LINEWEAVER. I have a statement on the Kings River project. (The statement referred to follows:)

STATUS OF REPAYMENT NEGOTIATIONS

The Kings River provides water to districts which embrace nearly a million acres of land in Fresno, Kangs, and Tulare Counties, Calif.

Pine Flat Dam and related works was authorized for construction by the Corps of Engineers in Public Law 534, 78th Congress, known as the Flood Control Act of 1944. The finding of feasibility was published as House Document 630, 76th Congress, 3d session, and the allocation report was published as House Document 136, 80th Congress, 1st session. Pursuant to Presidential directives and reclamation law, the Bureau of Reclamation is the agency designated to receive for the United States the conservation benefits for the project.

Pine Flat Reservoir is nearing completion. In 1952, the reservoir reached a high level of storage of 130,000 acre-feet. This water was released in accordance with the adopted criteria for flood control, and there was no storage for conservation purposes. The current construction schedule contemplates permissible storage of about 800,000 acre-feet by March 1953. The Corps of Engineers has stated publicly that the dam is to be used for flood control until a repayment contract is signed, and so it is presumed that the same (1952) operating criteria will prevail for 1953 unless conclusive agreement on repayment arrangements can be reached.

For 5 years the Bureau has been endeavoring to negotiate a contract with representatives of the Kings River water users for the irrigation benefits. The amount of repayment for irrigation benefits has been set at $14,250,000. The $14,250,000 figure was established at a time when it was contemplated that the cost of the dam would be $36 million. Since then (1947), the estimated costs have increased to approximately $51 million. However, the Corps of Engineers has stated that it does not intend to make another allocation of costs and on this basis the Bureau is continuing negotiations for the aforesaid figure.

The principal difference between the negotiating parties at this time appears to be whether or not the water users will obtain, for the payment they make, complete rights to storage in the reservoir or rights limited to storage for irrigation purposes. The Bureau holds that the repayment figure does not include rights to storage for other purposes, such as power development.

A meeting between the regional director and representatives of the Kings River water users was held on January 8, 1953, at which there was general agreement on the latest draft of contract with the exception of the point mentioned. The water users requested a number of minor changes which do not appear to present major difficulties.

Somewhat closely related to this is the matter of Fresno Slough water rights obtained by the Government through the Miller and Lux purchase and exchange contract in 1937. These rights are to the use of certain waters of Kings River which pass through the channel known as Fresno Slough and were acquired with Central Valley project funds. Kings River officials do not admit to the Government rights and have requested that the Fresno Slough rights be transferred to them. However, the Bureau has insisted that if the Gresno Slough rights are transferred it can only be for an amount in addition to the amount paid for the Pine Flat Reservoir benefits.

The application of the excess land provisions of reclamation law has also been involved in the prolonged repayment contract negotiations.

Construction and Rehabilitation and Operation and Maintenance

Colorado-Big Thompson Project, Colorado

Mr. Jensen. Now, we turn to the Colorado-Big Thompson project. We will insert in the record at this point the special data on pages 27 through 30 as contained in the summary sheets, also pages 347–352 and 112–117 of the justifications.

(The matter referred to follows:)

Construction and O. and M.

Construction

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$128,743,663	$22,879,095	$7,773,000
Unliquidated obligations	6,371,204	−3,848,204	−2,023,000
Total obligations	135,114,867	19,030,891	5,750,000

Operation and maintenance

	Actual 1952	Estimated 1953	Estimated 1954
Expenditures	$847,503	$445,200	$775,410
Unliquidated obligations	15,409		
Total obligations	862,912	445,200	775,410
Appropriation or estimate	[1] 890,300	[2] 445,200	775,410

[1] $27,388 allotment in excess to needs.
[2] Excludes $843,250 allotted to Colorado-Big Thompson project but scheduled under Missouri River Basin project for operation of integrated power operations.

History of Project Development

Location

The project is located in north central Colorado, extending eastward from the headwaters of the Colorado River in the general vicinity of Grand Lake, Granby, and Kremmling across the Continental Divide to the headwaters of the Big Thompson River near Estes Park and eastward to farm lands in northeastern Colorado.

Purpose

To provide irrigation and power.

Authorization

The Colorado-Big Thompson project was authorized by a finding of feasibility by the Secretary of the Interior, dated December 20, 1937, approved by the President on December 21, 1937.

Initial date

Planning 1935, advance planning 1937, construction 1938.

Date of functional completion of construction

Fiscal year 1955.

Fiscal year and amount of initial allotment of appropriations for construction

Fiscal year 1938, $2,900,000.

COSTS

Original estimated cost	$31,702,772
Allocation of cost:	
Irrigation	24,800,000
Power	6,902,772
Present estimated cost	164,131,000
Allocation of cost:	
Irrigation	99,356,000
Power	63,224,000
Power cost incurred for other projects	1,551,000

REPAYMENT

Status of repayment contract negotiations. Forty-year repayment contracts in amount of $25,889,000 have been entered into with Northern Colorado Water Conservancy District. Contract also entered into with conservancy district for rental of irrigation water prior to project completion (estimated to return additional $3 million to apply on construction cost).

Amount to be repaid and repayment period

	Amount	Repayment period regular	Total
			Years
Irrigation	$25,889,000	1958–97	40
Power	133,691,000	1943–2010	(1)

[1] Project construction costs allocated to commercial power will be repaid within 50 years from the date individual facility becomes revenue producing.

Repayment of costs allocated to irrigation

Water users		[1] $28,889,000
Power:		
Direct	$6,431,038	
Interest component	64,035,962	
		70,467,000
Total		99,356,000

Repayment costs per acre

Federal investment per acre	$162.00
From irrigators	47.00
From power revenue	115.00
Annual water user charges:	
Construction	1.05
Operation and maintenance	.30
Total	1.35
Gross crop income per acre resulting from project irrigation	118.00

[1] Includes $3 million estimated net revenues from irrigation water rentals prior to completion of project construction and commencement of regular repayment period.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres) supplemental	230,000	288,000	410,000	615,000
Total	230,000	288,000	410,000	615,000
Power (kilowatts)	74,700	177,650	177,650	184,350
Power rates:				
(Mills per kilowatt-hour) firm at 50 percent load factor	7.1	7.1	7.1	5.4
Nonfirm (average)	4.3	4.3	4.3	3.3

Personnel: Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954—Continued

	Positions		Man-years
	Permanent	Temporary or seasonal	
Irrigation facilities:			
Actual June 30, 1952	12	1	
1953			
1954			
Power facilities:			
Actual June 30, 1952	97	1	
1953	31		
1954	45	1	
Joint facilities:			
Actual June 30, 1952			
1953	18		
1954	25		
District headquarters charge:			
Actual June 30, 1952			25.0
1953			5.0
1954			25.0
Denver office:			
Actual June 30, 1952			
1953			.1
1954			.2
Regional CPA services:			
Actual June 30, 1952			1.2
1953			.8
1954			.6
Total:			
Actual June 30, 1952	109	2	26.2
1953	49		5.9
1954	70	1	25.8

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$164,151,730
Total obligations to June 30, 1952		135,114,897
Allotment, fiscal year 1953	$18,000,000	
Prior year balance available	1,030,891	
Total obligations, fiscal year 1953		19,030,891
Allotment, fiscal year 1954	5,750,000	
Total obligations, fiscal year 1954		5,750,000
Balance to complete		4,255,942

JUSTIFICATION OF ESTIMATE

Authorization

The Colorado-Big Thompson project was authorized by a finding of feasibility by the Secretary of the Interior, dated December 20, 1937, approved by the President on December 21, 1937. Funds were first appropriated in the Interior Department Appropriation Act of August 9, 1937 (50 Stat. 595), for construction in accordance with Senate Document No. 80, 75th Congress.

Location

The project is located in north central Colorado, extending eastward from the headwaters of the Colorado River in the general vicinity of Grand Lake, Granby, and Kremmling across the Continental Divide to the headwaters of the Big Thompson River near Estes Park and eastward to farmlands in northeastern Colorado.

Description

The primary purpose of the project is to provide a supplemental water supply for the irrigation of 615,000 acres of irrigated land in northeastern Colorado. Surplus water of the Colorado River will be stored in Granby Reservoir and pumped by the Granby pumping plant into Shadow Mountain Lake. The water will then flow by gravity through Grand Lake and then by way of the Alva B. Adams Tunnel through the Continental Divide to the eastern slope. Continuing by gravity the diverted water will flow through a system of conduits and powerplants on the eastern slope to be finally stored in two reservoirs, Horsetooth and Carter Lake, with a combined active capacity of 264,134 acre-feet. Water from these reservoirs will be released through supply canals into the Poudre River, the Little and Big Thompson Rivers, South Platte River, St. Vrain Creek, and Boulder Creek, from which it will be rediverted by existing irrigation facilities. Green Mountain Reservoir, located on the Blue River, a tributary of the Colorado, stores excess runoff of that stream for later release to the Colorado River to replace that water being withheld by project facilities during those periods when downstream rights would otherwise be infringed upon. Additional releases may be made to the river according to provisions and interpretation of operating requirements set forth in Senate Document 80.

The powerplants of the project will be connected by a transmission system, interconnected with power systems of the North Platte, Kendrick, Riverton, Shoshone, and Missouri River Basin projects, in addition to other private and publicly owned power systems.

The project is designed to furnish a supplemental water supply for 615,000 acres of land and to have an installed capacity of 184,350 kilowatts.

Repayment

A contract, dated July 5, 1938, has been executed with the Northern Colorado Water Conservancy District for the repayment of not to exceed $25 million. A contract amending the contract of July 5, 1938, was entered into between the United States and the conservancy district on July 14, 1950, providing for an additional payment of $889,000 in forty equal annual installments, covering revised plan for the construction of the North Poudre gravity canal. On December 15, 1950, an interim contract was entered into with the conservancy district for the rental of water prior to the commencement of the construction repayment installments. This contract provides that a portion of the revenue be considered as an additional payment to the United States on the project construction cost not covered by the contracts, dated July 5, 1938, and July 14, 1950.

Status

Construction began in 1938. As of June 30, 1953, the project will be approximately 94 percent complete. At the present time work is under way on construction of Willow Creek feeder canal system, Estes Park-Foothills power system, Carter Lake Dams and Reservoir, Saint Vrain supply canal, Horsetooth feeder canal, North Poudre supply canal, Beaver Creek substation, Estes-Pole Hill 115 kilovolt transmission line, Salida-Gunnison 115-kilovolt transmission line, dispatch building, and shop buildings. Work is also under way on substations for transmission lines existing and under construction. Work will be started during the fiscal year on the Bounder Creek supply canal, and a ditch-rider house. Studies are under way for the extension of the project collection and storage facilities to meet the total water diversion contemplated in Senate Document 80.

Work proposed, fiscal year 1954

The fiscal year 1954 program provides for the completion of all storage, carriage and power generation facilities. This will involve minor completion work on the Willow Creek feeder canal system and Horsetooth feeder canal and completion of Estes Park-Foothills power system, Saint Vrain supply canal, Estes-Pole Hill and Salida-Gunnison transmission lines, conversion of the Akron and Yuma substations to 115-kilovolt operations and communictaions and control equipment. Construction will be initiated on the South Platte supply canal and the Flatiron-Valmont transmission line.

Justification

The project when authorized was expected to provide needed supplemental irrigation water and a power supply adequate to meet normal load growth of the area. The demand for supplemental irrigation water has increased materially and a critical power deficiency exists in the market area of the project. The major portion of the project should be completed as scheduled in order to provide full production of power and delivery of irrigation water by May 1953. Failure to complete remaining work as scheduled would result in serious losses in power and irrigation revenues as well as depriving the project area the supplemental irrigation water and power supply needed for normal growth.

The total estimated cost of the project has been increased from $160,068,000 to $164,131,000 (anticipated total obligations $164,151,730). The change is principally due to adjustment of the estimate to reflect actual costs on completed work or actual bid prices on work now under way, increases in cost of labor and materials during the past fiscal year, additional substation equipment required for satisfactory system operations, substitution of a two-speed motor for a single-speed unit in the Flatiron pumping plant, and substantial increases in the estimates for the Boulder Creek and South Platte supply canals resulting from design changes balanced in part by a substantial reduction in the estimate for the St. Vrain supply canal due also to design changes.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Green Mountain Dam and Reservoir	$7,065,000	$7,035,872	$3,128		$26,000
Green Mountain powerplant and switchyard	1,857,000	1,485,905	235,095		136,000
Granby Dam and Reservoir	12,475,000	12,000,957	84,043		390,000
Colorado River improvements	606,000	583,807	8,193		14,000
Willow Creek feeder canal system, 400 cubic feet per second	5,010,000	2,277,019	2,594,981	$50,000	88,000
Granby pumping plant and canal, 1,100 cubic feet per second	10,033,000	9,786,131	42,869		204,000
Shadow Mountain Dam and Lake	1,258,000	1,202,435	16,565		39,000
Alva B. Adams Tunnel, 550 cubic feet per second	13,011,000	12,602,379	17,621	36,000	355,000
Estes Park aqueduct and power system	15,601,000	14,997,809	202,191		401,000
Lake Estes and Olympus Dam	2,474,000	2,385,833	29,167		59,000
Estes Park-Foothills power system	33,761,000	18,206,255	12,402,745	2,320,000	832,000
Carter Lake Dams and Reservoir	3,814,000	3,101,967	575,033	55,000	82,000
Big Thompson powerplant switchyard and transmission line	1,475,000	11,773			1,463,227
Saint Vrain supply canal, 625 and 575 cubic feet per second	3,876,000	399,865	2,237,135	1,165,000	74,000
Boulder Creek supply canal, 200 cubic feet per second	1,971,000	147,588	158,412	1,618,000	47,000
South Platte supply canal, 85 cubic feet per second	1,323,000	14,496	75,504	620,000	613,000
Horsetooth feeder canal, 550 and 930 cubic feet per second	8,803,000	7,669,207	841,793	101,000	191,000
Horsetooth Dams and Reservoir	12,764,000	12,494,022	26,978		243,000
Poudre supply canal, 250 and 1,500 cubic feet per second	2,203,000	2,119,325	24,675		59,000
North Poudre supply canal system, 250 cubic feet per second	3,336,000	2,453,338	807,662		75,000
Project substations, multiple line use	3,106,000	1,225,523	568,477	519,000	793,000
Green Mountain:					
Dillon 115-kilovolt line and substation	227,000	176,503			50,497
Oak Creek 115-kilovolt line and substation	1,318,000	851,064	10,936	18,000	438,000

Schedule of construction program, fiscal years 1953 and 1953—Continued

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program—Continued					
Kremmling Tap-Gore Junction-Muddy Pass 69-kilovolt lines and substations	$458,000	$282,087	$80,913	----------	$95,000
Estes-Granby pumping plant-Green Mountain 69-kilovolt lines and substations	1,698,000	1,604,273	21,727	$3,000	69,000
Estes-Flatiron and Estes-Marys Lake 115-kilovolt lines	417,000	310,423	54,577	44,000	8,000
Estes-Pole Hill-Flatiron 115-kilovolt line	302,000	136,599	157,401	----------	8,000
Flatiron-Greeley-Beaver Creek (Brush) Sterling 115-kilovolt lines, substations, and shops	2,561,000	2,201,132	64,868	90,000	205,000
Flatiron-Brighton-Beaver Creek (Brush)-115-kilovolt lines and substations	1,507,000	1,276,980	21,020	30,000	179,000
Flatiron-Valmont 115-kilovolt transmission line	408,000	----------	----------	388,000	20,000
Flatiron-Fort Collins-Cheyenne Tap 115-kilovolt line and substations	981,000	612,782	38,218	----------	330,000
Beaver Creek (Brush)-Limon 115-kilovolt line and substations	1,039,000	772,372	23,628	21,000	222,000
Beaver Creek (Brush)-Yuma-Wray 115-kilovolt lines and substations	1,696,000	801,100	290,900	325,000	279,000
Sterling-Holyoke 69-kilovolt line and substations	664,000	582,988	49,012	----------	32,000
Salida-Gunnison 115-kilovolt line and substations	1,551,000	780,520	751,480	----------	19,000
Communication, control, and dispatching service equipment	1,134,000	682,920	302,080	126,000	23,000
Permanent improvements	2,348,000	670,963	818,037	280,000	579,000
Total cost	164,131,000	123,944,212	23,637,064	7,809,000	8,740,724
Construction facilities	----------	3,384,625	−601,969	48,000	−2,830,656
Stores	----------	1,025,259	−326,000	−149,000	−550,259
Project investigations	----------	507,601	170,000	65,000	−742,601
Operation and maintenance during construction	20,730	20,730	----------	----------	----------
Transfers, credits and other expenditures	----------	−138,734	----------	----------	138,734
Total expenditures	164,151,730	128,743,693	22,879,095	7,772,000	4,755,942
Unliquidated obligations	----------	6,371,204	−3,848,204	−2,023,000	−500,000
Total obligations	164,151,730	135,114,897	19,030,891	5,750,000	4,255,942
Method of financing:					
Allotment, fiscal year 1953	----------	----------	$18,000,000	----------	----------
Prior year balance available	----------	----------	1,030,891	----------	----------
Allotments required	----------	----------	----------	$5,750,000	$4,256,000

Operation and Maintenance

Summarized financial data

Total, fiscal year 1952	$862,912
Allotment fiscal year 1953	[1] 445,200
Total obligations, 1953	[1] 445,200
Allotment fiscal year 1954	775,410
Total obligations, 1954	775,410

[1] Excludes $843,250 allotted to Colorado-Big Thompson project but scheduled under Missouri River Basin project for operation of integrated power operations.

Justification of Estimate

Location

The Colorado-Big Thompson project is located in the north-central section of Colorado and is centered 75 miles north and west of Denver. Irrigation facilities extend from the Green Mountain Dam area, 17 miles south of Kremmling, Colo., to the vicinity of Loveland, Colo. Power generation facilities extend from Green Mountain in western Colorado to Loveland in eastern Colorado.

General conditions

The Colorado-Big Thompson project construction began in 1938 with the construction of Green Mountain Dam and power plant on the Blue River, 17 miles south of Kremmling, Colo.

The purpose of the project is primarily the diversion of water from the Colorado River Basin on the western slope of the Continental Divide to the Big Thompson River Basin on the eastern slope. This diversion is accomplished by means of the 13-mile long Alva B. Adams tunnel which was started in 1941 and completed in 1947.

A collection system for the diversion has been constructed on the west slope and consists of the Willow Creek Dam and Reservoir, the Granby Dam and Reservoir, and the Shadow Mountain Dam and combination reservoir Shadow Mountain-Grand Lake. To aid the collection system Willow Creek pumping plant is being built and will be placed in operation late in 1953, pumping water from Willow Creek Reservoir into Granby Reservoir. Granby pumping plant was built and placed in operation April 1, 1951, pumping water from the Granby Reservoir into Shadow Mountain Reservoir where it will pass into Grand Lake and then through the Adams tunnel to the Big Thompson Basin.

On the east slope, storage reservoirs have been built to receive the water diverted from the Colorado River and will be used to store the supply of supplemental irrigation water. The two major storage reservoirs are Carter Lake and Horsetooth.

Power features are a major part of the project and will consist of the Green Mountain, Estes, Marys Lake, Flatiron, Polehill, and Big Thompson powerplants which will have a combined generating capacity of 184,350 kilowatts. A small part of this power will go for the operation of Granby, Willow Creek, and Flatiron pumping plants and the remainder will be distributed over the Missouri River Basin integrated transmission system to REA's, municipalities, and other customers.

The revenue from the sale of this energy will be used for the payment of annual expenses and construction costs. The Northern Colorado Water Conservancy District is obligated to repay $28,889,000 under their present contract and interim agreements and the remaining costs are allocated to the interest-bearing debt which is repaid with 3-percent interest and the non-interest-bearing debt which is repaid partly from the interest component of the interest-bearing debt and the remainder from net operating revenue of the project.

Work proposed, 1954

	Program, 1954	Increase (+) or decrease (−) from 1953
MULTIPURPOSE FACILITIES		
Storage system	$61,400	+$20,500
For continued operation and maintenance of dams and reservoirs. Increase due to addition of Carter Lake Reservoir, operation of Willow Creek and Horsetooth Reservoir, and the incorporation of Grand Lake drainage into Shadow Mountain Reservoir.		
Carriage system	204,000	+84,400
For continuation of normal operation and maintenance of Granby pumping plant and various canals, tunnels, conduits, and siphons composing CBT project. Increase due to initial full year operation at Willow Creek pumping plant, Granby pump canal, Willow Creek pump canal, Olympus siphon and tunnel, Horsetooth feeder canal, Prospect Mountain Conduit, Carter Lake pressure tunnel, Bald Mountain tunnel, Pole Hill tunnel, and Rattlesnake tunnel.		
Total obligations, multipurpose	265,400	+104,900
POWER FACILITIES		
Electric generation	439,800	+179,100
For normal operation and maintenance of powerplants. Increase primarily due to initial full year of operation at Flatiron and Pole Hill powerplants.		
Transmission and distribution expense		
Transmission operation and maintenance was integrated with Missouri River Basin project in fiscal year 1953.		
Other production expense	10,210	+210
For operation and maintenance of camps, warehouses, offices, and for costs of snow studies and other related activities. Increase due to additional camp facilities transferred to O. and M.		
Replacements and improvements	60,000	+46,000
For replacement of power and pumping-plant components and for replacement of general property; i. e., cars, trucks, radio, fire, and safety equipment.		
Subtotal, obligations, power	510,010	+225,310
Total obligations, all facilities	775,410	+330,210

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
Multipurpose facilities: Operation and maintenance:			
Storage system	$45,209	$40,900	$61,400
Carriage system	133,377	119,600	204,000
Total obligations, multipurpose facilities	178,586	160,500	265,400
Power facilities: Operation and maintenance:			
Electric generation	310,372	260,700	439,800
Other production expense	477,142	10,000	10,210
Transmission and distribution expense	256,069		
Replacements and improvements		14,000	60,000
Subtotal, power	1,043,583	284,700	510,010
Project-energy interchange (net)	−359,257		
Total obligations, power	684,326	284,700	510,010
Total obligations, all facilities	862,912	445,200	775,410
Allocation:			
Irrigation	89,293	110,000	132,200
Power	773,619	334,200	642,210
Flood control		1,000	1,000
Total obligations	862,912	445,200	775,410
Method of financing:			
Allotment	890,300	[1] 445,200	
Unobligated balance	−27,388		
Allotment required			775,410

[1] Excludes $843,250 allotted to Colorado-Big Thompson project but scheduled under Missouri River Basin project for operation of integrated power operations.

Project statistics

Feature or item	Unit	Actual, fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
Irrigation system:				
Irrigable area: Supplemental	Acres	615,000	615,000	615,000
Total	do	615,000	615,000	615,000
Cultivated area (total)	do	615,000	615,000	615,000
Gross crop value	Dollars	$47,544,000	$49,250,000	$49,200,000
Average gross crop value per cultivated acre	do	$77	$80	$80
Storage dams and reservoirs	Number	4	7	10
Diversion dams	do	1	1	1
Pumping plants	do	1	2	3
Canals, tunnels, and conduits	Miles	30	34	65
Drains	do	0.4	0.4	0.4
Operating roads	do	38	45	45
Power system:				
Powerplants	Number	3	5	5
Annual sales	Kilowatt-hours	236,433,437	(1)	(1)
Total power revenues	Dollars	$1,361,653	(1)	(1)
Plant capacity	Kilowatts	74,700	177,650	177,650
Patrol roads	Miles	20	25	25

[1] Power revenues and sales are shown under Missouri River Basin integrated power operation statistics.

Mr. JENSEN. I note you are asking for $5,750,000 for the project in this 1954 budget.

Mr. MARKWELL. Mr. Chairman, I might point out that the amount has been modified and reduced by Secretary McKay to $5,362,000 by the elimination of the request for the Flatiron-Valmont transmission lines.

Mr. JENSEN. Yes; I know that.

What are your estimated needs for completion of the Colorado-Big Thompson project?

Mr. MARKWELL. Mr. Chairman, we are requesting for 1954 the amount of $5,362,000 and we will need after that approximately $4,250,000.

Mr. JENSEN. Yes; $4,255,942, to be exact.

Mr. MARKWELL. Yes, sir.

Mr. JENSEN. Can we depend on that?

Mr. MARKWELL. I see no reason why not, Mr. Chairman. We are nearing completion on this project and I would hope that this estimate for the amount to complete it would be correct.

Mr. JENSEN. Explain, briefly, the existing contracts with the Northern Colorado Conservancy District.

Mr. LINEWEAVER. This contract with the Colorado Conservancy District was executed in the late 1930's, July 15, 1938, and provides for the repayment of the irrigation facilities, not to exceed $25 million. A contract amending this contract of July 15, 1938, was entered into between the United States and the conservancy district in July 1950, providing for an additional payment of $889,000 in 40 equal installments, covering revised planning for the construction of the North Poudre gravity canal. On December 15, 1950, an interim contract was entered into with the conservancy district for the rental of irrigation water prior to the commencement of the construction. This contract provides that a portion of the revenues be considered as an additional payment to the United States on the project construction cost not covered by the contracts dated in 1938 and 1950.

You will recall that several years ago, at the instance of this committee, we undertook to increase the obligation of the Northern Colorado Conservancy District above the $25 million when the cost of materials and everything else went up, but we failed in that particular, but let me say this, and I think Mr. McPhail can explain it in more detail: By reason of the readjustment of the power installations and the market for power in Colorado, the feasibility of the project has been maintained and it will pay out, notwithstanding the fact that the water users will only repay $25 million, plus this $889,000 and on the rental of water, which will run the amount up probably more than half a million dollars.

If you would like for Mr. McPhail to tell a little more about the power "pay-out" proposition, he will be glad to do it, I am quite sure.

Mr. JENSEN. All right, Mr. McPhail.

Mr. MCPHAIL. The "pay-out" study of the project indicates full "pay out" with the rates established. Those rates average about 7¼ mills per kilowatt-hour for firm power and I believe about 4.3 mills per kilowatt-hour for secondary power.

Mr. JENSEN. Are you able to market all the power produced?

Mr. MCPHAIL. Yes, sir. We are having no trouble whatever marketing what we can produce. In fact, the demand is greater than the supply we have.

Mr. JENSEN. Who is getting this power?

Mr. MCPHAIL. The largest portion of it is going to customers of the preferred class, but a large amount is also going to private utilities in the area.

Mr. JENSEN. Are your relations with private power companies more harmonious than they were a few years ago? Have you resolved most of your problems so far as the building of transmission lines, and so on, is concerned? There was some dispute about them a few years ago.

Mr. MCPHAIL. I believe we are pretty well in agreement with the power companies, and the lines that were in dispute have largely been constructed.

Mr. JENSEN. Either by the Bureau or by private industry?

Mr. MCPHAIL. By the Bureau for the ones I was speaking of.

Mr. JENSEN. The Congress refused to appropriate for some of the lines which you requested, and I was interested in the outcome.

Mr. MCPHAIL. There was only one in dispute, I think, Mr. Chairman, and that was the line from Flatiron to Brighton and out to Brush. That was in dispute. After that was constructed, there remained one line in dispute, and for that one we are not asking funds again. That is the Flatiron-Valmont line.

Mr. JENSEN. Are any funds requested for transmission lines pending in this budget?

Mr. MCPHAIL. I think there is some money asked to complete lines or substations.

Mr. JENSEN. But not for any new starts?

Mr. MCPHAIL. No, sir; no new starts.

Mr. JENSEN. How many acres will this project provide water for?

Mr. LINEWEAVER. It will provide supplemental irrigation water to approximately 615,000 acres.

Mr. JENSEN. Have all the water users in that area signed contracts to use this water?

Mr. LINEWEAVER. Our contract is with the Northern Colorado Conservancy District, which is made up, principally, of the canal companies that have been established in that area for a good many years. The district has subsidiary contracts with the canal companies and several municipalities. The conservancy district levies advalorem taxes and all the property within the district I think, is subject to the advalorem taxes. So far as the obligation of the district is concerned, we feel that it is on about as solid ground as any reclamation area in the West.

Mr. JENSEN. We have some operation and maintenance on this project. Do you have a statement on operation and maintenance?

OPERATION AND MAINTENANCE OF POWER FACILITIES

Mr. MCPHAIL. I have a statement on operation and maintenance that I would like to offer it for the record.

Mr. JENSEN. We will be glad to have it inserted at this point.

(The matter referred to follows:)

OPERATION AND MAINTENANCE COLORADO-BIG THOMPSON PROJECT, COLORADO, POWER FACILITIES

A general description of this project is contained in the construction statement previously furnished this committee.

Of the total requested funds for operation and maintenance of this project during fiscal year 1954 an allotment of $642,210 is requested for the normal operation and maintenance of electrical features other than the transmission system and that part of the multipurpose features which is charged to power.

These electrical features of the Colorado-Big Thompson project are five powerplants and switchyards with an installed generating capacity of 177,650 kilowatts. These plants and their installed nameplate generating capacity are:

	Kilowatts
Green Mountain	21,600
Estes	45,000
Marys Lake	8,100
Flatiron	69,700
Polehill	33,250

The $642,210 allotment requested for this project in fiscal year 1954 represents an increase of $308,010 over comparable allotment for fiscal year 1953. This increase is due principally to initial full-year operation of Flatiron and Polehill powerplants plus additional multipurpose facilities being placed in operation and a small increase in replacement and improvement items required for continuous and safe operation of the power facilities.

The expense of operation and maintenance of the transmission lines and substations is included with the allotment request of the Missouri River Basin project.

The Polehill and Flatiron powerplants were scheduled to be in operation in May 1953 at the time the fiscal year 1954 budget was submitted to the Congress. The present revised equipment delivery time for these powerplants now indicates that initial operation will be in October 1953 and full operation in February 1954. The fiscal year 1954 allotment request for these plants of $114,300 could be reduced by approximately $30,000 due to this revised construction schedule. The total power allotment request for Colorado-Big Thompson project of $642,210 could, therefore, be reduced to $612,210.

Mr. McPHAIL. I would like to make a short summary on this item, if you care for me to do so.

Mr. JENSEN. All right; summarize it briefly.

Mr. McPHAIL. We are requesting $642,210 which will be an increase of $308,010 over the allotment for fiscal year.

This increase is due to the initial operation of the Flatiron and Polehill powerplants, plus additional multipurpose features and a small increase in replacement and improvement items that are required for continuous and safe operation of the facilities.

The expense of operation and maintenance of the transmission lines is included with the allotment request of the Missouri Basin project, which conforms with our testimony before this committee last year. The portion here requested is for the power facilities other than transmission lines.

Mr. JENSEN. Regarding those power facilities, I have a memorandum from our investigating staff, which as you know has been looking into the functions of the Interior Department, which I shall read:

As to power, there simply is not a critical power deficiency in that area.

This relates to the Colorado-Big Thompson power project.

Colorado-Big Thompson is not yet fully in production, but will be shortly. Moreover, the privately owned utilities have demonstrated their willingness and their ability to increase output, both in terms of plants and transmission facilities. As an example, there has recently been completed at Denver a steam plant, costing $23 million, which will deliver considerably more firm power than the Colorado-Big Thompson plant. That steam plant is being built by private utilities at a cost of $23 million, plus.

Do you agree with that statement?

Mr. McPHAIL. I do not take any particular exception to that. The utilities have been forward-looking in the area and have built facilities, as required, to meet their loads. On the other hand, the load increase has been such that the Bureau has experienced no difficulty in dispos-

ing of all of the power that has come in on not only the Colorado-Big Thompson project, but all of the interconnecting systems in that area. The loads have grown very fast there. It is a rapidly growing area, and I think that all concerned have done everything possible to provide the best possible power supply for the area.

Mr. JENSEN. You agree, then, that there is no power shortage in the area at this time, especially after the Colorado-Big Thompson power is put on the line?

Mr. MCPHAIL. I do not know of any defiiency in power there at the moment. All I can say is, that the power we are bringing in, we are getting applications for as rapidly as we can make it available.

Mr. JENSEN. Are you taking some customers away from private industry?

Mr. MCPHAIL. The last customers that we took from private industry were some 2 or 3 years ago, when we entered into an arrangement with the Public Service Co. of Colorado, under which the company agreed to wheel to REA projects scattered all over Colorado. Those REA projects are being served by Bureau power under that wheeling agreement.

Mr. JENSEN. Those agreements are similar to the other wheeling agreements that are in effect in many other areas, as recommended by the Congress?

Mr. MCPHAIL. Yes, sir.

STATEMENTS ON OPERATION AND MAINTENANCE OF IRRIGATION FACILITIES AND CONSTRUCTION

Mr. LINEWEAVER. We have a statement on the operation and maintenance of the irrigation facilities of the Colorado-Big Thompson project. Also a statement on the construction program for this project.

Mr. JENSEN. Without objection, they will be inserted in the record at this point.

(The matter referred to follows:)

OPERATION AND MAINTENANCE, COLORADO-BIG THOMPSON PROJECT, COLORADO

The Colorado-Big Thompson project is located in the north-central section of Colorado and is centered 75 miles north and west of Denver. Irrigation facilities extend from the Green Mountain Dam area, 17 miles south of Kremmling, Colo., to the vicinity of Loveland, Colo.

The purpose of the project is primarily the diverison of water from the Colorado River Basin on the western slope of the Continental Divide to the Big Thompson River Basin on the eastern slope. This diversion is accomplished by means of the 13-mile-long Alva B. Adams tunnel which was started in 1941 and completed in 1947.

A collection system for the diversion has been constructed on the west slope and consists of the Willow Creek Dam and Reservoir, the Granby Dam and Reservoir, and the Shadow Mountain Dam and combination reservoir Shadow Mountain-Grand Lake. To aid the collection system Willow Creek pumping plant is being built and will be placed in operation late in 1953, pumping water from Willow Creek Reservoir into Granby Reservoir. Granby pumping plant was built and placed in operation April 1, 1951, pumping water from the Granby Reservoir into Shadow Mounain Rererveir where it will pass into Grand Lake and then through the Adams tunnel to the Big Thompson Basin.

On the east slope, storage reservoirs have been built to receive the water diverted from the Colorado River and will be used to store the supply of supplemental irrigation water. The two major storage reservoirs are Carter Lake and Horsetooth.

Of the total amount requested for operation and maintenance in fiscal year 1954, $132,200 will be required for the care and operation of irrigation facilities, an increase of $22,200 over the funds available during the current year. One thousand dollars will be required for flood-control operations in connection with Green Mountain Dam.

CONSTRUCTION AND REHABILITATION, COLORADO-BIG THOMPSON PROJECT

The Colorado-Big Thompson project is one of the Bureau's major achievements on which construction started in 1938 and is near the completion stage. With funds requested in fiscal year 1954 and those anticipated in fiscal year 1955 the project will be able to supply supplemental irrigation water to 615,000 acres. The power capacity of 177,650 kilowatts installed in 5 of the 6 powerplants will be realized by the close of fiscal year 1953. The area served by the project has experienced tremendous growth during and since World War II, principally due to new defense installations, and increased irrigation water and power are urgently needed as soon as they can be made available.

The program for which funds are requested in 1954 provides for the substantial completion of all storage, carriage, and power generation facilities except the Big Thompson powerplant and South Platte supply canal. During the year work will be completed on the following items: Minor work on the Willow Creek canal system, Horsetooth feeder canal, Estes Park-Foothills power system, St. Vrain supply canal, Estes-Polehill and Salida-Gunnison transmission lines. Final payment will be made to the contractor for the Carter Lake Dams and Reservoir. Construction will be started on the South Platte supply canal and will be continued on the Boulder Creek supply canal. Work will continue on the installation of equipment, control and communication systems, and betterments such as overhead, ground wires, armor rods, etc., on the transmission lines and substations. Conversion of portions of the Beaver Creek-Yuma-Wray transmission line from 69 to 115 kilovolts will be continued. Additions will be made to permanent improvements throughout the project.

Very recently the city of Boulder expressed a desire to join the Northern Colorado Conservancy District with the intention of having the Bureau construct a storage reservoir for municipal water storage along the route of the Boulder supply canal. Advance information indicates that the city favors the construction of this reservoir. If an agreement for its construction is reached in the near future, the schedule for the canal will be revised.

CONSTRUCTION AND REHABILITATION

PAONIA PROJECT, COLORADO

Mr. JENSEN. Now, we turn to the Paonia project, Colorado, and we will insert in the record at this point from the special data sheets pages 31 through 33, and pages 355 to 358 of the justification.

(The matter referred to follows:)

CONSTRUCTION

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$1,891,408	$170,166	$9,422
Unliquidated obligations	166	−166	
Total obligations	1,891,574	170,000	9,422

HISTORY OF PROJECT DEVELOPMENT

Location

In Delta and Gunnison counties in west-central Colorado.

Purpose

Irrigation, flood control, and fish and wildlife benefits.

Authorization

March 18, 1939, by President.

Reauthorization

Act of June 25, 1947 (61 Stat. 181).

Initial date:

Planning, 1936; advanced planning, 1940; construction, 1949.
Date of functional completion of construction, 1958.[1]
Fiscal year and amount of initial allotment of appropriations for construction: fiscal year 1949, $471,000.

COSTS

Original estimated cost	$994,000
Allocation of cost: Irrigation	994,000
Present estimated cost	6,723,308
Allocation of cost:	
Irrigation	6,576,008
Flood control	74,100
Fish and wildlife	73,200

[1] Includes work on unauthorized Spring Creek Dam and Minnesota division facilities.

REPAYMENT

Status of repayment contract negotiations

Repayment contract executed in 1948 with North Fork Conservancy District for payment of not to exceed $2,320,000 in 68 years following 3-year-development period for 1 irrigation block and a 10-year-development period for another block.

Amount to be repaid and repayment period

	Amount	Repayment period		Total
		Regular	Development	
		Years	*Years*	*Years*
Irrigation	$2,320,000	68	3-10	78
Power	[1] 4,256,008			

[1] Irrigation costs assigned for payment from power revenues of future power developments of the proposed Colorado River storage project.

Repayment of costs allocated to irrigation

Water users	$2,320,000
Power:	
Direct	4,256,008
Interest component	
Total	6,576,008

Repayment costs per acre

Federal investment per acre	$386.00
From irrigators	136.00
From power revenue	250.00
Total	772.00
Annual water user charges:	
Construction	2.00
Operation and maintenance	1.50
Total	3.50

Gross crop income per acre resulting from project irrigation, $100.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full	960	1,050	1,050	2,210
Supplemental	11,440	12,340	12,340	14,830
Total	12,400	13,390	13,390	17,040

PROPOSED NEW ADDITIONS

Spring Creek Dam and Reservoir, Minnesota division facilities: The project was reauthorized by act of Congress, June 25, 1947; however before construction can proceed on Spring Creek Dam and Minnesota siphon, the project must be reauthorized again, as it was found infeasible to construct the Spring Creek Dam at the site contemplated in the authorizing report. A revised report has been prepared which recommends reauthorization of the project as a participating project with the Colorado River storage project. In the revised plan, power revenues from the Colorado River storage project would aid in repayment of costs allocated to irrigation.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$6,730,980
Total obligations to June 30, 1952		1,891,574
Prior year balance available	$172,422	
Balance available in subsequent year	−2,422	
Total obligations, fiscal year 1953		170,000
Allotment, fiscal year 1954	$7,000	
Prior year balance available	2,422	
Total obligations, fiscal year 1954		9,422
Balance to complete		4,659,984

JUSTIFICATION OF ESTIMATE

Authorization

Original authorization was made under reclamation law by Presidential approval on March 18, 1939. The project was reauthorized by an act of Congress on June 25, 1947 (61 Stat. 181), as described in Senate Document No. 61, 80th Congress. A revised report has been prepared including this project as a supplement to the Colorado River storage project and submitted to Congress, and present work and future anticipated programs are based on this report.

Location

The project is located in Delta and Gunnison Counties in west central Colorado. Project works extend west from Spring Creek Dam Site to lands along the North Fork of the Gunnison River including the towns of Paonia and Hotchkiss.

Description

The purpose of the project is to provide a full water supply for the irrigation of 14,830 acres of land now inadequately irrigated and 2,210 acres of new land. Facilities of the project include Spring Creek Dam, Fire Mountain Canal diversion dam, enlargement and extension of existing Fire Mountain Canal, enlargement of existing Overland Canal, and Minnesota siphon and pumping plant.

Repayment

A contract has been executed with the North Fork Water Conservancy District for the repayment of construction costs not to exceed $2,320,000. Under the revised plan the water users of the Minnesota division would contract through the North Fork Conservancy District to repay this portion of allocated costs. The remaining reimbursable costs will be repaid from revenues of future power development.

Status

Construction began April 14, 1949. As of Jun e 30, 1953, the project will be approximately 30 percent complete; the completed works consisting of the Fire Mountain Canal diversion dam, approximately 29.4 miles of the Fire Mountain Canal enlargement, and 1.8 miles of the Fire Mountain Canal extension.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes minor work on the enlarged and extended Fire Mountain Canal, technical assistance and guidance in water exchange problems, and completion of operating agreements with water users organizations.

Justification

By the end of fiscal year 1953, irrigation facilities will have been completed to serve some 12,000 acres of land except for a minor amount of cleanup work. In order to place these facilities in a satisfactory operating condition and to furnish necessary guidance and assistance to the water users, it is essential that the funds requested be made available to carry out the program.

The total estimated cost of the project has been increased from $1,428,467 to $6,723,308 (anticipated total obligations $6,730,980). The increase is due to the inclusion in the plan of Spring Creek Dam and Reservoir, Minnesota siphon pumping, Fire Mountain Canal extension, and Overland Canal enlargement and to emergency work required as a result of slides on the Fire Mountain Canal.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Spring Creek Dam and Reservoir	$4,533,000	$5,306			$4,527,694
Fire Mountain Canal diversion dam and headworks	130,660	130,160	$500		
Minnesota siphon pumping plant	356,000				356,000
Fire Mountain Canal, station 4+95 to 481+50	653,000	605,668	42,666	$3,000	1,666
Fire Mountain Canal, station 481+50 to 1765+66	873,648	696,660	127,308	3,200	46,480
Overland Canal enlargement	177,000	7,598			169,402
Total cost	6,723,308	1,445,392	170,474	6,200	5,101,242
Construction facilities		172,469	1,100	3,200	−176,769
Stores		1,215	−200		−1,015
Project investigations		334,313			−334,313
Transfers, credits, and other expenditures	7,672	−61,981	−1,208	22	70,839
Total expenditures	6,730,980	1,891,408	170,166	9,422	4,659,984
Unliquidated obligations		166	−166		
Total obligations	6,730,980	1,891,574	170,000	9,422	4,659,984
Method of financing:					
Allotment, fiscal year 1953					
Prior year balance available			172,422	2,422	
Balance available in subsequent year			−2,422		
Allotments required				7,000	4,660,000

Mr. JENSEN. You have a rehabilitation and betterment program going on there, I believe.

Mr. LINEWEAVER. That is essentially what it is, Mr. Chairman.

Mr. JENSEN. When will you finish that?

Mr. MARKWELL. Next year.

Mr. JENSEN. Why not this year?

Mr. MARKWELL. The work there is essentially enlarging and relining two canals. We took bids on concrete lining for two sections of these canals and the bids were too high and there was no opportunity to readvertise and do the work prior to the time the canals would have to be put in service again. Therefore, we will have to wait until after the irrigation season to finish up the work.

I will make a brief statement on construction for the record.

Mr. JENSEN. We will be glad to have it.

(The matter referred to follows:)

CONSTRUCTION AND REHABILITATION, PAONIA PROJECT, COLORADO

Paonia project was authorized by a finding of feasibility by the Secretary of the Interior on March 16, 1939, which was approved by the President March 18, 1939. By means of a finding approved by the Secretary May 12, 1947, and by act of June 25, 1947, the project was reauthorized to accommodate changes in the plan and recognize increases in the estimated construction cost.

The project is located in Delta and Gunnison Counties in west central Colorado and extends along the North Fork of the Gunnison River. The ultimate plan for the project includes storage (Spring Creek Dam and Reservoir) and the modification of the existing canals to improve and extend irrigation development in the project area. Facilities of the project include Spring Creek Dam and Reservoir, Fire Mountain Canal diversion dam, the enlargement and extension of the existing Fire Mountain Canal, the Minnesota siphon pumping plant, and the enlargement of the existing Overland Canal.

Construction began in April 1949 and as of June 30, 1953, the project will be about 30-percent complete. The Fire Mountain Canal diversion dam and headworks have been completed and by the end of fiscal year 1953 about 29.4 miles of Fire Mountain Canal enlargement and about half of the 3½-mile Fire Mountain Canal extension will be completed. Funds requested for fiscal year 1954 will provide for minor work on priming and puddling of the Fire Mountain Canal, provide for technical assistance in water-exchange problems, and will complete arrangements for operating agreements with water users organizations. Ultimately by the construction of Spring Creek Dam and Reservoir, Minnesota siphon pumping plant, Overland Canal enlargement, and other improvement of the Fire Mountain Canal in future years, the project will provide for irrigation facilities for 2,210 acres of new land and 14,830 acres using supplemental water.

Mr. LINEWEAVER. Do you want to mention Spring Creek Reservoir in that phase of the Paonia project, which has been deferred, pending reauthorization?

Mr. MARKWELL. Yes; I think it should be pointed out to the committee that some of the original features of the project, as authorized, have been deferred, pending approval of the upper Colorado storage project.

MINIDOKA PROJECT, IDAHO

Mr. JENSEN. We turn to the Minidoka project, Idaho, North Side pumping division.

We will insert in the record at this point, pages 36 through 38, of the special data, and pages 365–368 of the justifications.

(The matter referred to follows:)

CONSTRUCTION

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$934,931	$285,245	$1,627,000
Unliquidated obligations			
Total obligations	934,931	285,245	1,627,000

HISTORY OF PROJECT DEVELOPMENT

Location

In Minidoka County in south central Idaho.

Purpose

Irrigation.

Authorization

Act of September 30, 1950 (64 Stat. 1083), limits cost to $11,395,000.

Initial date

Planning, 1904.
Advanced planning, 1950.
Construction, 1952.
Date of functional completion of construction, 1959.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1953, $150,000.

COSTS

Original estimated cost	$11,395,000
Allocation of cost: Irrigation	11,395,000
Present estimated cost	10,509,000
Allocation of cost: Irrigation	10,509,000

REPAYMENT

Status of repayment contract negotiations. Since 90 percent of the land of this Division is in public ownership, and since no water user organization is in existence, repayment terms with future landowners will be negotiated before the expiration of the development period of 10 years.

Amount to be repaid and repayment period

Irrigation	[1] $9,013,000

[1] In addition to this amount, the water users will repay concurrently their proportionate share of cost of construction of American Falls and Palisades Reservoirs ($881,000).

Repayment period (years):	
Regular	50
Development	10
Total	60

Repayment of costs allocated to irrigation

Water users	$9,013,000
Power	[1] 1,496,000
Total	10,509,000

[1] To be paid from revenues from sale of irrigation pumping power on this project.

Repayment costs per acre

Federal investment per acre	[1] $164.00
From irrigators	142.00
From power revenue	22.00
Annual water users charges:	
Construction	[1] 2.75
Operation and maintenance	6.75
Total	[1] 9.50

[1] Includes American Falls and Palisades Reservoir costs.

Gross crop income per acre resulting from project irrigation, $100.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full	5,107	7,207	17,207	69,500
Supplemental				
Total	5,107	7,207	17,207	69,500

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$10,667,149
Total obligations to June 30, 1952	934,931
Allotment, fiscal year 1953	150,000
Prior-year balance available	[1] 135,245
Total obligations, fiscal year 1953	285,245
Allotment, fiscal year 1954	1,627,000
Total obligations fiscal year 1954	1,627,000
Balance to complete	7,819,973

[1] Includes $105,092 general investigation funds.

JUSTIFICATION OF ESTIMATE

Authorization

The North Side pumping division of Minidoka project was authorized for construction by the act of September 30, 1950 (64 Stat. 1083).

Location

The North Side pumping division is located in south central Idaho in a crescent shaped area bordering the Minidoka Irrigation District in Minidoka County.

Description

The project, a unit long deferred in the development of the Minidoka project, consists of 69,500 acres of potentially irrigable public withdrawn land, 55,850 acres of which are to be irrigated by pumping from ground water and 13,650 acres of which are to be irrigated by pumping from Snake River. A portion of the presently reserved water in American Falls Reservoir, augmented by storage from the proposed Palisades project, will be used to supply the 13,650 acres. Planning activities, since 1947, have demonstrated that sufficient ground water is available for full levelopment of the project. One Government well was operated in 1949, 3 in 1950, and a total of 11 in 1951, irrigating 5,107 acres. In addition there were 62 private wells in operation in 1951 within and adjacent to the project area irrigating approximately 23,000 acres. With this heavy withdrawal of ground water there has been no evidence of water table recession as observed in the observation wells.

Repayment

The reimbursable cost of the north-side pumping division will be allocated for repayment to irrigation and power. Irrigation-water charges will repay the reimbursable cost allocated to irrigation and revenues accruing to the Palisades; American Falls power system will repay the apportionment to power. A water-users organization will be established and a repayment contract executed to the close of the development period as required by section 9 of the 1939 Reclamation Project Act.

Status

Prior to fiscal year 1953, the investigations work on this division has been financed from general investigations and preconstruction funds. As of June 30, 1952, 11 irrigation wells were in operation, supplying 5,107 acres and ground-water observations were being made on 13 observation wells. Preconstruction surveys on well and lateral locations for 20 new wells were complete. During fiscal year 1953, the $285,245 of construction funds will be used to drill, equip, and build a lateral system for 5 new wells, and subjugate 2,100 acres of new land.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes the drilling of 33 new wells, construction of lateral system for 20 wells, and purchase and installation of pumps and motors for 20 wells, subjugating an additional 10,000 acres of land. Surveys are to be initiated and specifications prepared for irrigation works of unit A of the division, comprising 13,650 acres. Construction of a small amount of transmission line is contemplated and construction of a substation and distribution lines to 35 wells will be in progress.

Justification

The full construction program is justified to produce food and fiber for expanded consumption brought about by population growth. The project is conducive to development from raw unproductive land to highly productive land. Early development of this project is required to meet demands for homesteads and to provide necessary homes for veterans. The project should be pursued to orderly completion in the most expeditious manner so that water filings can be carried to final proof. The most expeditious construction of the project, tempered somewhat to allow sufficient caution of overappropriation of the ground water supply, is the most economical means of completing the project. Local sentiment is such that sluggish development would greatly antagonize the interested people who have waited so long to achieve construction of the project. As calculated under current procedures, the project has a benefit cost ratio of 4.35 to 1.00.

The total estimated cost of the project has been increased from $9,897,750 to $10,509,000 (anticipated total obligations $10,667,149). This adjustment is due principally to the price-index increases, design changes, and a more complete analysis of all project features on the basis of actual experience gained during the preconstruction period.

Schedule of construction program, fiscal years 1953 and 1954, Minidoka project north side pumping division, Idaho

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Pumping plants	$825,000			$75,000	$750,000
Deep wells	4,330,000	$470,020	$155,000	681,000	3,023,980
Canals and conduits	95,000			2,000	93,000
Laterals	1,920,000	187,262	48,000	259,000	1,425,738
Drains	235,000	14,101	1,000	12,000	207,899
Farm-unit development	337,000	80,529	34,000	35,000	187,471
Transmission lines and switching facilities	1,496,000		2,000	304,000	1,190,000
Distribution lines, 249-kilovolt	731,000	24,542		255,000	451,458
General property	540,000	36,477			503,523
Total costs	10,509,000	812,931	240,000	1,623,000	7,833,069
Construction facilities		8,131	−1,255	6,000	−12,876
Stores		720	1,500	−2,000	−220
Operation and maintenance during construction	156,489	111,489	45,000		
Transfers, credits, and other expenditures	1,660	1,660			
Total expenditures	10,667,149	934,931	285,245	1,627,000	7,819,973
Total obligations	10,667,149	934,931	285,245	1,627,000	7,819,973
Method of financing:					
Allotment, fiscal year 1953			150,000		
Prior-year balance available			[1] 135,245		
Allotments required				1,627,000	7,820,000

[1] Includes $105,092 general investigations funds.

Mr. LINEWEAVER. Mr. Chairman, I have a brief statement here on the North Side pumping station and, also, as to the settlement program that is provided for.

Mr. JENSEN. We will be glad to receive those statements for the record at this point, without objection.

(The matter referred to follows:)

MINIDOKA PROJECT, NORTH SIDE PUMPING DIVISION, IDAHO

The North Side pumping division is a long-deferred unit in the ultimate development of the Minidoka project. This division consists of 69,500 acres of land of which 55,850 acres will be served by ground water pumping and 13,650 acres will be served by pumping from the Snake River.

Prior to fiscal year 1953, a small investigation program, primarily experimental in nature, was made to definitely establish the adequacy of the groundwater reserves. As of last June 30, there were 11 wells in operation, serving some 5,100 acres and about 15 observation wells were being studied. Concurrently with the Government's work, private operators were developing their adjacent lands through pumping. The work so far performed by the Bureau and the success of the private developments indicates conclusively that there is an adequate supply of ground water in the area. On the results of these studies and the indications that substantial benefits that will accrue, the Senate Appropriations Committee recommended and funds were provided for the start of a five-well program for fiscal year 1953. The Bureau immediately started work on this program and all major contracts have been awarded for this initial work.

With the funds requested for fiscal year 1954, it is proposed that 33 new wells will be drilled and that construction on the lateral system will be brought up to the level necessary to bring about 10,000 acres of land into production each year for fiscal years 1954, 1955, and 1956 and the balance of the land in the next 3 years. Further designs and specifications will be prepared to accomplish this program as well as the preparation of designs and award of contracts for the power facilities required to service the pumping plants.

Almost all of the land of the North Side pumping division is on Federal public domain and full development will make about 750 new farms available for home-

steading by enterprising veterans. There is strong support for continuation of the project by the people in the area and as the project has a very high benefit-to-cost ratio, it is highly desirable that work on this unit be continued in the most economical manner, as scheduled.

SETTLEMENT PROGRAM, MINIDOKA PROJECT—NORTH SIDE PUMPING DIVISION

The land comprising the North Side pumping division of the Minidoka project is public land which when supplied with irrigation water will be available to settlement by veterans. There is a strong demand for this land as indicated by the several hundred letters received from veterans inquiring when the land would be opened to settlement.

The first land opening is scheduled for the last half of fiscal year 1953 when 72 farm units comprising 7,289 irrigable acres will be made available to veterans. About 100 farm units comprising approximately 10,000 irrigable acres are scheduled for opening in 1954 and approximately the same number in 1955 and 1956, while about 235 would be opened in 1957 according to present schedules.

The new settlers on this division will be faced with land clearing and leveling, layout of the farm distribution system, institution of approved irrigation practices and other problems. Through provisions of a memorandum of understanding with the University of Idaho arrangements have been made for the services of an assistant county agent who will give special assistance to these new settlers.

Mr. LINEWEAVER. This year we expect to open to settlement 72 public lands farm units, comprising about 7,289 irrigable acres. The notice to file applications, which will cover veterans preference under the established law, will go out about the middle of April, and the final date will be some time about the middle of July and the award is expected to be made in midsummer, so that the settlers who get the units will make their selections this fall and be able to get in shape over the winter to start irrigation operations next spring.

Mr. JENSEN. The justifications point out that there are 62 private irrigation wells operated within and adjacent to the project lands. If there is that much private interest and investment in that land in that area, why should not the land be opened up for entry and the project discontinued?

Mr. LINEWEAVER. It is a public land unit, Mr. Chairman, where construction has been long deferred in connection with the Minidoka project, which was started along back within a few years after the Reclamation Act was passed in 1902. The local people there have been, I may say, concerned about the delay in the Bureau of Reclamation opening up these public lands within the 69,500 acres, which has been set up as the north side pumping division. Last year, you will recall that this was written into the appropriation bill in the Senate as one of the "new starts." We have proceeded to get the program in shape to open the lands. As to why we should not get out of the area and let the private operators get in there, it is an authorized program and we feel that as long as that is the program, endorsed by the Congress, we should proceed with it and open the land to settlement by veterans.

Mr. JENSEN. I will now turn the questioning over to Mr. Budge. These projects are in his own home State and, without a doubt, he will ask some questions about them, because I know he has taken a great deal of interest in them.

Mr. BUDGE. Thank you, Mr. Chairman.

I might say, as indicated on page 36 of the work sheets which we have here, this project was originally planned in 1904. The land was withdrawn for the reclamation project some time subsequent to that—a good many years ago. Since I have been a Member of Congress,

I have talked with the people in the Bureau of Reclamation and I know Mr. Lineweaver and I have had several conferences concerning this project, looking toward either the Bureau going ahead with the development or stepping out of the picture, as indicated in the question which the chairman asked a few minutes ago. The Bureau has gone ahead this past year and I do not believe there is any question as to the feasibility of the project. It is excellent land—some of the finest that there is in my State—and, as a matter of fact, the land all around it has been placed under irrigation under private enterprise, and I am happy to see development going forward, because it is excellent land and will be, in all respects, feasible.

Mr. Lineweaver, would you care to comment, in view of the remarks of the chairman, and the gentleman from Pennsylvania, as to speeding up these projects and whether this one can be accelerated?

Mr. LINEWEAVER. Mr. Budge, I would like to submit for the record a letter to you under date of February 27, 1953, from Assistant Secretary Aandahl, as to what we could do to speed up the scheduled development of the north side pumping division of the Minidoka project if the Congress provided additional money.

The 1954 budget provides $1,627,000, and the 1955 budget $1,888,780, and the 1956 budget $2,278,147. That is the present program.

After discussing the subject with the regional director at Boise, he said an accelerated program could be worked out if we had $3,511,500 in 1954, $4,725,000 in 1955, and $1,829,000 in 1956. He advised that if we had the funds, we could not increase the acreage of 7,289 to serve in 1953, but in 1954 we could increase the acreage from 10,000 to 12,000, with 120 farm units instead of 100; in 1955 we could increase the acreage from 10,000 to 18,000 and provide for 180 farm units instead of 100; and in 1956 we could increase the acreage from 10,000 to 32,300, or 323 farm units instead of 100. That would shorten the program from 7 years to 3, and at the end of 1956 we would have 695 farm units under irrigation.

Mr. BUDGE. That would be the completion of the entire project?

Mr. LINEWEAVER. Yes, sir; of the north side unit, which has 69,589 acres, of which some 52,000 or 53,000 will be irrigated from wells, and the rest by gravity.

To clear up your question yesterday about that million dollars that was transferred from construction funds for preliminary investigations in the north side unit, those were funds that were left over from the improvement of the Milner-Gooding Canal appropriated for construction, and we recommended to the Appropriations Committee that they be made available for test wells to determine the feasibility or irrigation water by wells in that area. That is the reason we are able now to determine that an adequate water supply for some fifty thousand-odd acres will be available from underground sources.

I submit Assistant Secretary Aandahl's letter to Mr. Budge under date of February 27, 1953, for the record.

(The letter referred to follows:)

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington 25, D. C., February 27, 1953.

Hon. HAMER H. BUDGE,
House of Representatives, Washington 25, D. C.

MY DEAR MR. BUDGE: Reference is made to your recent telephone conversation with Assistant Commissioner Lineweaver relative to the possibility of speeding

up the scheduled development of the north side pumping division of the Minidoka project.

The regional director at Boise has submitted a revised schedule whereby the 69,589 acres in units A and B would be served with irrigation facilities and be available to entry by April 1956. He has also submitted a tentative estimate of the funds required for this accelerated program. The funds required and the area served by years under the present and the proposed accelerated programs are shown below.

FUNDS

Fiscal year	Present program	Proposed program
1954	$1,627,000	$3,511,500
1955	1,888,780	4,725,000
1956	2,278,147	1,829,000
1957	1,784,000	[1] 50,000
1958	1,080,000	[1] 35,000
1959	732,700	[1] 26,500
Balance to complete	56,350	

[1] Continuing drainage.

AREA

	Acreage served	Farm units	Acreage served	Farm units
1953	7,289	72	7,289	72
1954	10,000	100	12,000	120
1955	10,000	100	18,000	180
1956	10,000	100	32,300	323
1957	23,560	236		
1958	5,000	50		
1959	3,740	37		
Total	69,589	695	69,589	695

This accelerated program would require for fiscal year 1953, $50,000 in addition to that appropriated for this division. If the accelerated program is adopted this amount could be supplied from funds available to the Bureau of Reclamation if authority to reallot available funds is granted.

The development of unit A in accordance with the proposed accelerated schedule is dependent upon adequate storage in Palisades Reservoir which can be accomplished only if that schedule is also speeded up so as to provide storage beginning in the spring of 1956.

Officials of the Bureau of Reclamation and the Department will be glad to furnish additional information or discuss this proposed program further with you if you so desire.

Sincerely yours,

FRED G. AANDAHL,
Assistant Secretary for Water and Power Development.

Mr. BUDGE. What is the portion that is nonreimbursable on this project?

Mr. LINEWEAVER. Practically all of this will be reimbursable; $10,509,000 is the cost allocated to irrigation and $9,000,000 of the total cost of $10,509,000 will be repaid through pumping power.

Mr. BUDGE. That makes it 100 percent reimbursable, does it not?

Mr. LINEWEAVER. Yes.

Mr. BUDGE. Mr. Chairman, this appears to me to be a project that has been long delayed. Funds were not made available by the Congress. The program is now under way, and it can be completed in 1956 if an accelerated program is followed, and I hope the committee and the Congress will seriously consider the acceleration of the program as set forth by the Bureau.

Mr. JENSEN. You feel that the funds that are being asked for here will accomplish the accelerated program which you speak of, Mr. Budge?

Mr. BUDGE. The funds requested in the revised statement would complete the program in 1956, rather than the present program of 7 years as called for in the budget.

(Discussion off the record.)

Mr. BUDGE. Mr. Lineweaver, is there any way that the power line costs could be eliminated from this project?

Mr. LINEWEAVER. I could not say, Mr. Budge, at this time. We can negotiate with the Idaho Power Co., which serves that area, and see what can be done. I understand negotiations are already in progress with the Idaho Power Co.

Mr. BUDGE. Of course I am interested in keeping costs as low as possible that have to be repaid, and that is the reason for asking the question.

Mr. LINEWEAVER. I think that is highly desirable.

Mr. NORRELL. I am wondering if I am reading my figures right on this project: Federal investment per acre, $164.

Mr. LINEWEAVER. Yes, including the part allocated to American Falls.

Mr. NORRELL. And $142 from irrigators, and $22 from power revenue.

Mr. LINEWEAVER. That is the way it was worked out.

Mr. NORRELL. That is a whole lot of money.

Mr. BUDGE. Mr. Chairman, I would like to comment that the area immediately adjacent to this contemplated area has been placed under cultivation in the last 3 or 4 years, and anyone who can secure land there would be very happy to get it at a far greater charge than is indicated here. It is extremely productive land, and private enterprise has developed all around this reclamation withdrawal.

OPERATION AND MAINTENANCE

MINIDOKA PROJECT, IDAHO-WYOMING

Mr. LINEWEAVER. I have a statement here on the Minidoka project operation and maintenance.

Mr. JENSEN. Without objection the statement may be inserted in the record.

(The statement referred to follows:)

OPERATION AND MAINTENANCE, MINIDOKA PROJECT, IDAHO-WYOMING

The Minidoka project provides a full or supplemental water supply to more than 1 million acres of irrigable land from 5 reservoirs with a combined capacity of 2,784,625 acre-feet of storage space. The initial development of the project, beginning in 1904, included the multipurpose Minidoka dam and powerplant, two major canal systems, and Jackson Lake Reservoir for additional project storage. Subsequent major developments include: enlargement of Jackson Lake Reservoir (1913–16); construction of American Falls Dam (1925–27); the Gooding division, consisting primarily of a 70-mile canal and laterals for approximately 20,500 acres of land (1927–51); and the Upper Snake River division (1935–40), consisting of the Island Park and Grassy Lake Dams.

Operation and maintenance activities of project reserved works are financed by congressional appropriations of Reclamation funds and advances made by project water users. For irrigation features, the appropriated funds are used

to finance that proportion of the annual costs chargeable (1) to the Minidoka irrigation district (gravity division), (2) to the storage space in American Falls Reservoir reserved by the United States for future project development, currently being leased annually to Warren Act contractors, and (3) to deep well pumping operations on the north side pumping division. Reimbursement for these expenditures is made to the Reclamation Fund in the following manner: (1) by collection from the Minidoka irrigation district following the determination of the previous year's cost in accordance with provisions of the 1916 repayment contract with that district, and (2) through advanced water rental collections received from the various individuals and organizations to whom the 433,000 acre-feet of storage water is leased each year.

Repayment to the United States of the irrigation construction cost of the various project features is provided for in the several contracts with the water users. Costs of the gravity division are being repaid under 20-year water right contracts with the several hundred individual water users; joint obligation contracts have been negotiated with the American Falls Reservoir District No. 2, the Fremont-Madison irrigation district, and with the Burley irrigation district. A small group of nonconsenters in the latter district have repaid construction cost with few exceptions. Only the American Falls Reservoir District No. 2 and the Fremont-Madison irrigation district have substantial outstanding obligations to repay.

A total of $186,000 will be required during fiscal year 1954 for operation and maintenance of irrigation and flood control facilities, of which only $1,000 is allocated for flood control and will be nonreimbursable. Of the remainder, $100,000 will be advanced by the water users. An appropriation of $85,000 is requested for the balance of irrigation needs, which will be repaid through assessments and water rentals.

MARCH 18, 1953.

POWER FACILITIES

The Minidoka project includes more than 1 million acres bordering the upper Snake River in south centra. and eastern Idaho.

Of the total funds being requested in fiscal year 1954 for the operation and maintenance of the Minidoka project, an allotment of $275,000 is required for the normal operation and maintenance of the electrical features plus that portion of the multipurpose features that are charged to power.

The Minidoka powerplant and switchyard with a generating capacity of 13,400 kilowatts, 110 miles of transmission lines, and 30 substations comprise the electrical features of this project.

The fiscal year 1954 allotment request is $27,876 less than that required for fiscal year 1953.

CONSTRUCTION AND REHABILITATION

PALISADES PROJECT, IDAHO

Mr. JENSEN. The next item for consideration is the Palisades project. We will insert in the record at this point pages 39 to 41 of the special data requested from the Bureau of Reclamation on this project, and pages 370 to 374 of the justification.

(The data referred to follows:)

CONSTRUCTION

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$4,277,614	$10,949,861	$17,650,000
Unliquidated obligations	1,027,678	−1,027,678	
Total obligations	5,305,292	9,922,183	17,650,000

HISTORY OF PROJECT DEVELOPMENT

Location

Bonneville County on South Fork of Snake River in western Idaho.

Purpose

Irrigation, power, flood control, and recreational benefits.

Authorization

Report and Findings by the Secretary of the Interior December 9, 1941. (H. Doc. 457, 77th Cong., 1st sess.)

Reauthorization

Act of September 30, 1950 (64 Stat. 1083), limiting total cost to $76,601,000.

Initial date:

Planning, 1934
Advanced planning, 1945
Construction, 1949
Date of functional completion of construction, fiscal year 1958.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1945, $250,000.

COSTS

Original estimated cost	$24,092,000	Present estimated cost	$76,601,000
		Allocation of cost:	
Allocation of cost:		Irrigation	37,391,000
Irrigation	10,216,000	Power	15,964,000
Power	5,711,000	Flood control	22,733,000
Flood control	8,165,000	Fish and wildlife	365,000
		Recreation	148,000

REPAYMENT

Status of repayment contract negotiations. Contracts with 41 water user organizations for repayment of about $6,400,000 have been executed. Additional contracts to cover the balance of the amount payable by irrigation are being negotiated.

Amount to be repaid and repayment period

	Amount	Repayment period		Total
		Regular	Development	
			Years	*Years*
Irrigation	$10,800,000	1957 to 1996	0	40
Power	42,555,000	[1] 1957 to 2008	0	(1)

[1] Construction cost ($15,964,000) allocated to commercial power is scheduled to be returned in 29 years (1985). Irrigation cost ($26,591,000) assigned for payment from power revenues is scheduled to be paid in 62 years (2018).

Repayment of costs allocated to irrigation

Water users		$10,800,000
Power:		
Direct	$19,122,796	
Interest component	7,468,204	
		26,591,000
Total		37,391,000

Repayment costs per acre

Federal investment per acre	$58
From irrigators	17
From power revenue	41

Annual water user charges: Private irrigation development on which information not available.

Income per acre resulting from project irrigation: No information available.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres) supplemental				650,000
Power (kilowatts)				114,000
Power rates (mills per kilowatt-hour):				
Firm, estimated at 50 percent load factor				4.5
Nonfirm (average)				2.0

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$76,000,000
Total obligations to June 30, 1952		5,305,292
Allotment, fiscal year 1953	$9,900,000	
Prior year balance available	22,183	
Total obligations, fiscal year 1953		9,922,183
Allotment, fiscal year 1954	17,650,000	
Total obligations, fiscal year 1954		17,650,000
Balance to complete		43,122,525

JUSTIFICATION OF ESTIMATE

Authorization

The project was initially authorized in 1941 as the Palisades Dam project by presentation to the President and Congress of a report and findings by the Secretary of the Interior on December 9, 1941 (H. Doc. 457, 77th Cong., 1st sess.), under the provisions of section 9 of the Reclamation Project Act of 1939 (53 Stat. 1187).

Intensive investigations and studies conducted subsequently by the Bureau of Reclamation and other Federal agencies enlarged and added to the original benefits, necessitating the introduction of a bill before Congress to reauthorize the project on a larger and broader basis. The project was reauthorized under the act of September 30, 1950 (64 Stat. 1083).

Location

Palisades Dam will be located at Calamity Point on the South Fork of the Snake River, about 8 miles west of the Idaho-Wyoming boundary, 57 miles east and upstream from Idaho Falls, Idaho.

Description

The basic plan for Palisades project consists of an earth-fill dam 260 feet high and 2,200 feet long at the crest; a tunnel spillway with controlled crest and a capacity of 47,000 cubic feet per second; two outlet tunnels with a combined capacity of 43,000 cubic feet per second; reservoir capacity of 1,400,000 acre-feet; a power plant with installed capacity of 114,000 kilowatts, and tranmsission lines necessary to deliver power to the load centers.

The Palisades Reservoir will provide supplemental irrigation water for some 650,000 acres of land located in the Upper Snake River Valley. The 114,000-kilowatt powerplant will provide hydroelectric energy to serve irrigation pumping, municipal, industrial, and rural cooperative loads, and will also supplement the proposed American Falls powerplant when needed to supply power for the Minidoka North Side development. Direct flood protection will be provided for land located on the Snake River Plain above American Falls Reservoir. Operation of the Palisades Reservoir will enhance the recreational value of Jackson Lake Reservoir, located upstream in Wyoming's Jackson Hole country, by greatly decreasing the fluctuations now necessary in the level of Jackson Lake.

In order to provide power for defense purposes in the present emergency, irrigators have agreed to a 5-year plan giving priority to the use of Palisades water for power production.

Repayment

Power revenues and irrigation payments will return the full reimbursable cost of the project. The act of September 30, 1950 (Public Law 864, 81st Cong., 2d sess.) provides that construction could not continue after December 31, 1952, unless a finding had been made by the Secretary of the Interior that contracts had been entered into by that date with various water users organizations of the Upper Snake River Valley providing for an average annual saving of 135,000 acre-feet of winter water. Contracts containing provisions for annual savings meeting this minimum requirement have now been entered into and a finding that the requirements of section 4 of the 1950 act have been complied with was made by the Secretary of the Interior on December 18, 1952.

In order to achieve the minimum required average annual water saving it was necessary to enter into contracts with 41 water users' organizations. Additional repayment contracts have yet to be entered into with respect both to American Falls space and Palisades space. It is now expected that these additional contracts which, though not required to be executed by any particular date, can be completed before the beginning of the 1953 irrigation season. Agreement on principle that will govern these remaining contracts has been reached.

Status

Preconstruction surveys which were started in 1945 are now virtually complete. Construction of 47.5 miles of the 51-mile transmission line from Palisades to Goshen was completed in August 1950. The prime contract including construction of the dam and power plant, diversion tunnel and excavation of the dam foundation was awarded in April 1952. Work on the relocation of United States Highway No. 26 is complete for the first 2.5-mile section and construction is under way on the next 2.6 miles. Construction of the 20-mile Forest Service road is also under way. Clearing the reservoir area has commenced and contracts have been awarded for construction of utilities within the administrative area. Some temporary houses, shops, and office buildings have been erected and work is under way on permanent-type residences, a warehouse, dormitory, and garage, and a laboratory building. A supply contract for the four turbines was awarded in July 1952, and the award of the contract for furnishing the generators is scheduled during January 1953. Studies for recreational facilities in the vicinity of the reservoir will be initiated by the Forest Service. By June 30, 1953, construction will be well under way on all principal-project features except the transmission lines and substations.

Work proposed, fiscal year 1954

The program for fiscal year 1954 includes continuation of construction on the reservoir, dam, power plant, and relocation of roads. Relocation of two more sections of United States Highway No. 26 and construction of the Snake River bridge will go under contract during the year. Contracts for clearing additional land in the reservoir area will be awarded. Studies by the Forest Service for recreational facilities will be continued. The acquisition of right-of-way will be virtually completed. A number of supply contracts for miscellaneous equipment for the dam and power plant will be awarded throughout the year. Preliminary survey and engineering work for the Palisades-Idaho Falls transmission line will be initiated.

Justification

The construction of Palisades project has been considered necessary for several years. With the completion of American Falls Reservoir in 1927, the hazard of irrigation-water shortage was believed to have been removed. Subsequent to 1928, however, during an unprecedented series of dry years, American Falls Reservoir failed to fill. As a result, serious crop losses were experienced. In 1931, the losses were approximately $3,000,000; in 1934 they were about $7,000,000, and in 1935, $1,000,000. Such serious losses revealed the urgent need for additional storage, such as would be provided by Palisades Reservoir.

The project is an essential component in the Federal plan for alleviating the regional power shortage which is growing under the impact of the defense activities in this area.

The Palisades project, in addition to providing needed holdover storage, will control fully all floods similar to those recorded in the past.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Palisades Dam and Reservoir	$38,211,000	$1,369,156	$6,880,000	$8,125,000	$21,836,844
Land and rights	1,906,000	230,122	490,000	1,185,878	
Relocation of existing property	7,663,000	870,569	1,535,000	2,515,000	2,742,431
Clearing lands	2,220,000	53,962	104,000	588,000	1,474,038
Power plant and switchyard	20,853,000	184,298	1,032,000	5,300,000	14,336,702
Palisades-Goshan 115-kilovolt transmission line	977,000	800,580	1,000		175,420
Palisades-Idaho Falls 115-kilovolt transmission line	833,000		1,000	50,000	782,000
Transmission lines and substations (future)	2,768,000		3,000		2,765,000
General property	657,000	130,264	402,826	38,822	85,088
Fish, wildlife, and recreational facilities	513,000		5,000	6,000	502,000
Total cost	76,601,000	3,638,951	10,453,826	17,808,700	44,699,523
Construction facilities		727,952	565,435	−100,000	−1,193,387
Stores		69,354	25,000	−25,000	−69,354
Project investigations		175,266	20,000		−195,266
Transfers, credits, and other expenditures	−601,000	−333,909	−114,400	−33,700	−118,991
Total expenditures	76,000,000	4,277,614	10,949,861	17,650,000	43,122,525
Unliquidated obligations		1,027,678	−1,027,678		
Total obligations	76,000,000	5,305,292	9,922,183	17,650,000	43,122,525
Method of financing:					
Allotment, fiscal year 1953			9,900,000		
Prior-year balance available			22,183		
Allotments required				17,650,000	43,123,000

Mr. JENSEN. Mr. Lineweaver, do you have a statement in justification of this project?

Mr. LINEWEAVER. Mr. Markwell will take care of that.

Mr. JENSEN. The budget is asking for $17,650,000 for this project for fiscal 1954. How much more money is estimated to be required to complete this job?

Mr. MARKWELL. $43,122,525.

Mr. JENSEN. When is it supposed to be completed?

Mr. MARKWELL. If we receive adequate funds, it can be completed in 1957. It is scheduled for final completion in 1958.

Mr. JENSEN. How about this 115-kilovolt transmission line from the dam to Idaho Falls which is proposed? I have information to the effect that the private utilities already have a line of sufficient capacity to handle all the power transmission that is needed in that area, and they are willing and ready to build more power capacity and transmission facilities if necessary.

Here is what the Utah Power & Light Co. testified to last year, for instance, before this committee, on February 7, 1952:

PALISADES

Our company, now as in the past, stands ready to construct any additional transmission lines to bring Palisades power to its system; to purchase all or any part of the firm power from the Palisades plant and such amounts of secondary and dump power (which can be used effectively only by a large system

with hydro and steam production) as can be used in the Utah-Idaho-Montana interconnected systems; to deliver power from its Goshen substation to the city of Idaho Falls, charging only a reasonable amount for such service; to transmit Palisades power over its then-existing lines for use by reclamation pumping projects or other Bureau projects under contracts to be negotinted with the Bureau. (Copy of this was mailed to you March 3, 1953, as was a copy of our testimony and comments of 1949.)

6. Absolutely no further Federal expenditures for transmission lines are required. No more lines will be required until at least 1957 when the third and fourth units are scheduled, and when, and if these units are installed additional transmission lines as required will be built by Utah Power & Light Co.

Mr. JENSEN. That would indicate that Congress is not justified in making appropriations for such a line. Why did the Bureau build the line to Palisades when the Utah Power & Light Co. repeatedly offered to do so at no expense to the Government?

Mr. MCPHAIL. The line was built by the Bureau first to bring construction power to the job and later to serve as an outlet for the power. The request for transmission-line money in this appropriation is for preliminary studies and surveys of the second line which must be built by someone to get present capacity out.

Mr. JENSEN. Why spend the taxpayers' money to make investigations and surveys when the power companies in that area agree to do what they say they will do as in the statement I have just read?

Mr. MCPHAIL. In order to arrive at any reasonable agreement with the company, certainly we should know what a line of our own would cost and what the expenses would be if the Bureau constructed the line itself. I am not familiar with the letter you quoted from, but in any event, I think before negotiating seriously with the power company we should know the alternative cost.

Mr. JENSEN. At least you know that no additional transmission lines will be necessary before 1957?

Mr. MCPHAIL. That is correct. We were not proposing any construction this coming year.

Mr. BUDGE. In view of the fact there were three projects in this budget in my district. One went out the window before we got started, but this is No. 3. The first one was taken out by being deleted from the budget.

I do not feel there is any question but that power generated from this dam can be marketed, and I believe the private utility in the area feels that there is no question as to that, and I am hoping that means can be worked out to make the costs as low as possible.

This happens to be another project that could be accelerated. It has a substantial power contribution, and as I understand the power can be brought on the line some 7 months prior to the scheduled date if the Congress sees fit to accelerate the ultimate completion.

Mr. Lineweaver, would you care to comment on that?

Mr. LINEWEAVER. We had the regional director at Boise make an examination of the situation, and he came up with this schedule, that by an accelerated program the storage could be advanced in Palisades Reservoir from 1957 to 1956.

I would point out that under average water and climatic conditions the reservoir will accumulate 800,000 acre-feet of water for use in the irrigation season of 1956, in contrast to the present program which contemplates no irrigation storage until after that irrigation season.

Under this accelerated schedule, the regional director estimates that the first unit would be in 4 months ahead of the present schedule, or in August 1956 instead of December 1956. Assuming average water conditions, the additional power generated in this 4 months' period alone will amount to approximately 100,000 kilowatt-hours, with a net revenue value of about $230,000. In addition, the Government would receive increased power revenues throughout most of calendar 1957, since each 1 of 4 generators would be placed on the line about 4 months earlier and all of them would be operated at a higher head as the result of earlier raising of the reservoir level. The average time on that would be about 7 months earlier, as you stated, for the 4 generators.

He estimated that because of the unusually good progress of the prime contractor on the dam, the accelerated schedule could be achieved, and that an increase of $1,915,000 in addition to the $17,650,000 appropriation requested for fiscal year 1954 would be required, principally for river diversion and embankment placement during fiscal year 1954, which would incur large earnings for second stage river diversion, with a peak rate of placement of embankment during 1954. Procurement of Government furnished materials would also require sizable increased payments to supply contractors to accommodate the expedited construction work.

In lieu of the above-mentioned increases in appropriations for fiscal years 1953 and 1954, an increase in the fiscal year 1954 appropriation in an amount of $3,571,000 would aid measurably in advancing the program and realizing project benefits at earlier dates than previously believed practicable.

I submit that statement for the record.

(The statement referred to follows:)

PALISADES PROJECT

Increased fund requirements, fiscal year 1953 and fiscal year 1954

As a result of unusually and unexpected good progress on construction of Palisades Dam it is apparent the construction time required for initial power production and irrigation water storage on the Palisades project can be shortened and many of the associated benefits can be realized at an earlier date than originally estimated. Provided funds, in addition to those presently programed, are made available, storage of irrigation water can start 1 year earlier, with storage advancing from fiscal year 1957 to fiscal year 1956. Under average water and climatic conditions and reservoir will accumulate 800,000 acre-feet of water for use in the irrigation season of 1956, in contrast to the present program which contemplates no irrigation storage until after that irrigation season. The value of this earlier irrigation is self-evident when considering that irrigation storage is the primary purpose for constructing the Palisades project and as a result of it some 650,000 acres of land in the upper Snake River Valley will receive a supplemental water supply.

If additional funds are provided, the generation of electric power can also be advanced over that previously proposed by 4 months, from December 1956 to August 1956. Assuming average water conditions the additional power generated in this 4-month period alone will amount to approximately 100 million kilowatt-hours with a net revenue value of about $230,000. In addition, the Government will receive increase power revenues throughout most of calendar year 1957 since each 1 of 4 generators will be placed on the line about 4 months earlier and all of them will be operated at a higher head as the result of earlier raising of the reservoir level.

The unusually good progress of the prime contractor for the construction of Palisades Dam is due to its pursuing a different scheme of river diversion and

construction of dam embankment than was contemplated earlier by the Bureau. The prime contractor elected to divert the river last August by excavating a temporary channel through the right-abutment area, while the Government had scheduled river diversion through the tunnels for early summer of 1953. This will overcome delays in construction of the tunnel by another contractor. In addition, a competent contractor's staff, ample and good quality equipment, and the unusually long fall construction weather have contributed to the contractor's unexpected and exceptionally good progress.

To realize these benefits at an earlier date an additional allocation of $1,656,000 is required for use in fiscal year 1953 in addition to the $9,900,000 allotment for fiscal year 1953. These additional funds will be required primarily for earlier payments for construction work. This includes higher and earlier earnings under the prime contract for care and diversion of the river and stripping of foundations and placing dam embankment as well as earlier earnings on associated contracts.

A $1,915,000 increase in addition to the $17,650,000 appropriation requested for fiscal year 1954 would be required principally for river diversion and embankment placement during fiscal year 1954 which will incur large earnings for second-stage river diversion, with a peak rate of placement of embankment during fiscal year 1954. Procurement of Government-furnished materials would also require sizable increased payments to supply contractors to accommodate the expedited construction work.

In lieu of the above-mentioned increases in appropriations for fiscal years 1953 and 1954 an increase in the fiscal year 1954 appropriation in an amount of $3,571,000 will aid measurably in advancing the program and realizing project benefits at earlier dates than previously believed practicable.

Mr. MARKWELL. Mr. Chairman I would like to submit a statement on construction.

(The statement referred to follows:)

CONSTRUCTION AND REHABILITATION, PALISADES PROJECT

The multipurpose Palisades project will provide hydroelectric power to serve industrial, rural cooperative, irrigation pumping, and municipal loads; supplemental irrigation for 650,000 acres of Upper Snake River Valley lands and direct flood protection for lands on the Snake River Plain above American Falls Reservoir. In order to provide power for defense purposes, the irrigators in the Snake River Valley have agreed to relinquish certain benefits they would receive from Palisades storage for the initial 5-year period of operation of the reservoir giving priority to use of Palisades water for power production.

Construction work on the major features of the project is proceeding at a very satisfactory rate. The prime contract for the construction of the 260 feet high and 2,200 feet long earth-fill dam, the Bureau's largest, and 114,000-kilowatt powerplant was awarded in April 1952, to J. A. Jones Construction Co. of Seattle, Wash., and Charles H. Tompkins Co. of Washington, D. C., on a joint venture low bid of $29,180,346. This contract calls for completion of the powerplant to allow for initial power generation by January 1957. However, as a result of excellent planning by the contractor and unusually favorable construction weather work has progressed much more rapidly than expected, and it now appears that earlier power generation may be possible.

A supply contract for four 36,500 horsepower hydraulic turbines was awarded in July 1952, and the contract for furnishing and installing four 28,500-kilowatt generators for the powerplant will be awarded by the end of fiscal year 1953. Work is under way on the relocation of United States Highway No. 26 and reservoir clearing. Contract work has recently been completed on the relocation of a Forest Service road; temporary houses, shops, and office buildings and permanent-type residences, a warehouse, dormitory, garage and laboratory building. Construction of the 51-mile transmission line from Palisades to Gosham was completed in August 1950 and is now being used to bring construction power to the damsite.

The $17,650,000 requested for fiscal year 1954 is needed to proceed with the work on major contracts already mentioned and the continuation of highway relocation, land acquisition, and reservoir clearing. The acquisition of right-of-way will be virtually completed during fiscal year 1954. Preliminary survey and engineering work for the Palisades-Idaho Falls transmission line will be initiated.

With all major features of the project now under way, construction should be allowed to continue at a maximum efficient rate in order to realize the project benefits of power, irrigation, and flood control without unnecessary delay.

Mr. BUDGE. Your reexamination of this project has shown it can be completed earlier than your previous completion date, due to favorable weather conditions and the progress of the contractors?

Mr. LINEWEAVER. Yes, sir. The prime contractor has done an excellent job in scheduling his work and taking advantage of the favorable weather and water conditions.

Mr. BUDGE. In fact, he is way ahead of schedule?

Mr. LINEWEAVER. Yes, sir.

Mr. BUDGE. Mr. Chairman, I would just like to state that in a project of this nature the Federal Government is already committed to the expenditure, and the expenditures to date have been substantial, and I think it would be good business for the Federal Government, as well as for everyone else, to complete the project and get the water on the land and the power on the transmission lines at the earliest date possible.

Mr. LINEWEAVER. May I just add this observation, Mr. Budge: At the rate the contractor is going now, we will not have sufficient money to make payments for this entire fiscal year. A month or so ago I discussed the matter with the chairman and the Department with respect to a supplemental appropriation, and it was agreed the time was not propitious to recommend such an appropriation. So in all probability we will have to give the contractor notice of the approaching exhaustion of funds. He knows already how much money he will be allocated for this year, and the provisions of the contract protect the Government from any liability for his exceeding the rate of progress for which funds have been allocated to him.

Mr. MARKWELL. Supplementing Mr. Lineweaver's statement, I would like to say that under those circumstances, when we give the contractor 30 days' notice of the probable exhaustion of funds to make payments for work performed, the contractor has 2 alternatives: He can go ahead on his own responsibility and finance himself until and if the Congress appropriates additional funds; or he has a right to close down.

Mr. FENTON. Where is this project with respect to the Minidoka project?

Mr. MARKWELL. The Minidoka project is not shown on the map.

Mr. JENSEN. We have a map here showing the Northwest area of the United States, showing Palisades Dam to the south of the American Falls Dam; and over to the western part of the United States the Anderson Ranch Dam, and the Black Canyon Dam. This is a very good small map and shows all of the dams in Idaho and Washington and Oregon and part of Montana, and gives a person a quick bird's-eye view of the installations in that whole great area.

Mr. BUDGE. Mr. Chairman, I am of course very cognizant, as I am sure those on the other side of the table know, of the fiscal condition of the country at this time, and I would like to say we are all hopeful that the military situation internationally will be resolved to some extent so that more individual attention can be given not only to the Palisades project and its acceleration, but to other reclamation projects in the United States; and if and when that time comes, I am

hoping that the Appropriations Committee will take action to speed up the completion of all reclamation projects.

Mr. JENSEN. I will say, Mr. Budge, that I believe every member of the committee is hoping for that very day to come, because certainly all of us who know about these good projects would like to see them rushed to completion in order to get them on the production line and get revenue coming into the Federal Treasury and paying back some of these millions that we have spent and loaned for the building of these projects.

As Mr. Budge says, we hope the day will soon come when this war situation which now faces us and the world will be resolved. When that day comes, we will all be happy, and then we hope we can appropriate more money for these worthy projects.

FORT PECK PROJECT, MONTANA-NORTH DAKOTA

Mr. JENSEN. The committee will come to order.

The first item that we will discuss this afternoon is the Fort Peck project, Montana-North Dakota. We will insert in the record at this point the special data requested from the Bureau of Reclamation on this project, pages 42 and 43, and also pages 376–381 of the justifications.

(The pages referred to follow:)

CONSTRUCTION

Fort Peck project, Montana-North Dakota

	Actual as of June 30, 1952	Estimated, 1953	Estimated 1954
Expenditures	$8,203,662	$1,170,574	$507,502
Unliquidated obligations	906,197	−748,695	−157,502
Total obligations	9,109,859	421,879	350,000

HISTORY OF PROJECT DEVELOPMENT

Location

Northern part of Montana and northwestern North Dakota.

Purpose

To provide, operate, and maintain facilities necessary to transmit electrical energy available for sale from the power plant.

Authorization

Fort Peck Project Act of May 18, 1938 (52 Stat. 403, 16 U. S. C. 833, et seq.).

Initial date

Planning, 1933, by Corps of Engineers.

Advanced planning, the act of May 18, 1938, authorized the Bureau of Reclamation to provide, operate, and maintain transmission lines to market the energy from Fort Peck powerplant.

Construction 1945 (Bureau portion of project).

Date of functional completion of construction. Work scheduled through fiscal year 1960. No detail schedule available thereafter.

Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1943, $499,475.

Costs

Original estimated cost	$5,050,000
Allocation of cost, power	5,050,000
Present estimated cost	25,530,000
Allocation of cost, power	25,530,000

REPAYMENT

Amount to be repaid and repayment period

Power included in the repayment of Missouri River Basin project.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Power (kilowatts)	85,000	85,000	85,000	185,000
Power rates (mills per kilowatt-hour):				
Firm at 50 percent load factor	5.4	5.4	5.4	5.4
Nonfirm (average)	3.3	3.3	3.3	3.3

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$23,750,782
Total obligations to June 30, 1952	9,109,859
Prior year balance available	421,879
Total obligations, fiscal year 1953	421,879
Allotment, fiscal year 1954	350,000
Total obligations, fiscal year 1954	350,000
Balance to complete	13,869,044

JUSTIFICATION OF ESTIMATE

Authorization

The Fort Peck project was authorized by the Fort Peck Project Act of May 18, 1938 (52 Stat. 403, 16 U. S. C. 833 et. seq.).

Location

The Fort Peck project is located in north central and northeastern Montana.

Description

There is existing a powerplant of 85,000-kilowatt capacity which was constructed and is operated by the Corps of Engineers, United States Army.

The Fort Peck project, in accordance with the Fort Peck Project Act, consists of the electrical facilities necessary to market the power generated at the Fort Peck powerplant. Under the provisions of this act, the Bureau of Reclamation is directed to provide, construct, operate, maintain, and improve such transmission lines, substations, and facilities as are found necessary to transmit electrical energy available for sale from the Fort Peck powerplant to existing and potential market. Transmission lines have been constructed or are planned for construction to connect the Fort Peck system with the transmission system of the Missouri River Basin project. Connections will be with the Garrison system at Williston, N. Dak., with the proposed Yellowtail system at Miles City, Mont., and with the Canyon Ferry system and the Montana Power Co. at Great Falls, Mont., and with the Montana-Dakota Utilities Co. and the Missouri River Basin system at Glendive, Mont. In addition to these interconnections, facilities have been constructed or are proposed for providing service to irrigation pumping projects and REA cooperatives in the Fort Peck project area.

Repayment

The allocation of costs to powerplant and irrigation plant is based on interim allocations of cost to power development approved by the Federal Power Com-

mission, dated April 20, 1943. Under this interim allocation, the Commission has determined that the entire cost of the powerplant should be allocated to power development and reserves the right to allocate the cost of joint facilities between power development and other facilities. The total power cost of the project has been divided between interest-bearing and interest-free investment on a basis of the kilowatt peak demand usage for irrigation pumping and commercial loads. The total power costs of the project will be repaid from power sales revenue.

Status

Construction of facilities for marketing Fort Peck power began in 1945. As of June 30, 1953, the project will be approximately 41 percent complete. The Fort Peck-Great Falls 161-kilovolt transmission line and the Fort Peck-Williston, Fort Peck-Glendive, Glendive-Miles City, and Havre-Shelby 115-kilovolt transmission lines are in operation. Irrigation units in the Yellowstone Valley and REA cooperatives in Montana and North Dakota are receiving electrical service. The Williston, Glendive, Miles City, Wolf Point, Circle, Savage, Sidney, Havre, Shelby, Rudyard, and other small substations are in service. The Fort Peck-Great Falls transmission line and the Rainbow substation at Great Falls were transferred to the Bureau from the Corps of Engineers during the past year.

Contracts have been awarded for material and construction for the Dawson County substation and warehouse buildings. A contract has been awarded for a 5,000-kilovolt-ampere transformer bank to replace the existing bank at the Circle substation. Preliminary design data have been compiled for the O'Fallon Creek substation and construction is in progress on the Glendive-Williston transmission line. Radio towers and radio equipment for communication system were purchased and installed.

Work proposed, fiscal year 1954

The program for fiscal year 1954 includes completion of construction on the Circle substation additions, Williston substation additions, Dawson County substation, and the O'Fallon Creek substation. The Glendive pumping plant tapline will be constructed and energized during the year. Preliminary design work and field investigations will be performed on the proposed 230-kilovolt transmission line and substation, and on transmission lines and substations for REA and irrigation pumping loads. The radio communication system will be expanded, and construction of reactive power control facilities will be initiated.

Justification

The Fort Peck Project Act of May 1, 1938, authorizes the construction and operation of the Fort Peck powerplant by the Corps of Engineers and assigns to the Bureau of Reclamation responsibility of marketing the energy generated at the powerplant. The original powerplant of two 35,000-kilowatt units, one unit of 15,000 kilowatts and the proposed second plant of 80,000 kilowatts, when operated together, will have an acutal peaking capacity of at least 180,000 kilowatts. Project transmission lines have been constructed and are in operation to market power from the existing 85,000-kilowatt Fort Peck powerplant to load centers. The transmission system required to market power and energy from scheduled generator capacity must continue an orderly expansion consistent with supply and market conditions. Substations and line extensions are from time to time required at new locations, and existing facilities have required, and will continue to require, alteration and enlargement, such as at Circle and Williston where increased capacity was necessary. Present transmission facilities east of the powerplant are already inadequate to carry the load to eastern Montana and western North Dakota without overloading. Because this situation will become progressively more critical, endangering system operations, and because a large additional line capacity will be required eventually when the second powerplant is installed, the need immediately for a new line cannot be stressed too forcefully. Initially, as soon as it is possible to construct, the line would be operated at 115 kilovolts, but it would be designed for 230-kilovolt operation and so operated for heavier duty when added generator capacity is ready for service.

The total estimated cost of the Fort Peck project has been increased from $23,400,000 to $25,530,000 (anticipated total obligations, $23,750,782). This increase is primarily due to the transfer of the Fort Peck-Great Falls line and Rainbow substation to the Bureau from the Corps of Engineers.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
CONSTRUCTION PROGRAM					
Yellowstone River area:					
Fort Peck-Glendive transmission lines and substations	$1,803,000	$1,317,144	$32,034	$43,000	$410,822
Glendive-Miles City transmission lines and substations	1,226,627	1,225,627	1,000		
Glendive-Williston transmission lines and substations	1,838,000	671,121	817,577	109,302	240,000
Transmission lines and substations for REA and irrigation pumping loads	1,027,482	437,201	145,753	121,445	323,083
Missouri River area:					
Fort Peck-Williston 115-kilovolt transmission lines and substations	2,663,805	2,162,248	73,557	91,000	337,000
Fort Peck-Glendive 230-kilovolt transmission lines and substations	7,310,000			10,000	7,300,000
Facilities for 2d powerplant at Fort Peck	950,000				950,000
Fort Peck-Wolf Point transmission lines and substations	66,595	66,595			
Medicine Lake transmission lines and substations	1,600,000				1,600,000
Missouri-Souris Montana transmission lines and substations	1,226,000				1,226,000
Transmission lines and substations for REA and irrigation pumping loads	381,157	120,763		3,000	257,394
Milk River area:					
Fort Peck-Great Falls transmission line and substation	1,801,333	1,583,333			218,000
Fort Peck-Whately transmission line and substation	226,264	85,251			141,013
Glasgow bench line and substations	949,713				949,713
Havre-Shelby transmission line and substations	1,624,280	1,617,260	7,020		
Metering equipment	110,024	19,540	8,000	10,000	72,484
Reactive power control equipment	150,000		3,000	67,429	79,571
Yellowstone district	480,000	147,013	153,648	76,000	103,339
Upper Missouri district	95,720	85,632	10,088		
Total cost	25,530,000	9,538,728	1,251,677	531,176	14,208,419
Investments		6,200	−200	−200	−5,800
Construction facilities		125,031	−8,000	5,000	−122,031
Stores		206,996	−5,000	9,548	−211,544
Undistributed costs		16,113	−16,113		
Transfers, credits, and other expenditures	−1,779,218	−1,689,406	−51,790	−38,022	
Total expenditures	23,750,782	8,203,662	1,170,574	507,502	13,869,044
Unliquidated obligations		906,197	−748,695	−157,502	
Total obligations	23,750,782	9,109,859	421,879	350,000	13,869,044
Method of financing:					
Prior-year balance available			421,879		
Allotments required				350,000	13,869,000

Mr. JENSEN. You are asking for an appropriation of $350,000 for fiscal year 1954 for the Fort Peck project.

Mr. LINEWEAVER. Mr. McPhail has that.

Mr. JENSEN. Mr. McPhail, how do you propose to spend that money?

Mr. MCPHAIL. This money will be used to continue work on several transmission lines and substations. The only new work to be intiated is on reactive control equipment necessary for more effective operation of the transmission system.

Mr. JENSEN. This amount will complete the jobs that you have in mind?

Mr. McPHAIL. No, sir. This amount will not complete all the work we have in mind. There will be some small amounts required in subsequent years.

Mr. JENSEN. How much?

Mr. McPHAIL. The balance to complete over future years is estimated to be $14,208,000. One of the largest items is a feature which has not been requested up to this date, but we anticipate will be needed in the future. That is an additional 230-kilovolt line running east from Fort Peck to join the system again probably at Glendive.

Mr. JENSEN. There has been no money appropriated for construction?

Mr. McPHAIL. No; and no request.

Mr. JENSEN. Has any money been spent on surveys?

Mr. McPHAIL. Only preliminary studies; no surveys.

Mr. JENSEN. Well, I suggest they do not spend any more money for investigations and research for such a line. I think there will be other arrangements made for building such a line, not out of the taxpayers' pockets.

Mr. McPHAIL. I mention this item because there is a study being carried on by the Corps of Engineers involving essentially doubling the capacity of the plant at some future time. This item would be in connection with that capacity if it is done.

Mr. JENSEN. We will cross that bridge when we get to it.

Mr. McPHAIL. Yes, sir.

COMPLETION OF SUBSTATIONS

Mr. JENSEN. What will this $350,000 complete? What is the purpose of it?

Mr. McPHAIL. The purpose of it is to complete the construction of several substations, the Williston substation, Dawson County substation, O'Fallon Creek substation, and a short line to the Glendive pumping plant.

Mr. JENSEN. How long is that one?

Mr. McPHAIL. It is very short. As I recall, it is 3 or 4 miles.

Mr. JENSEN. That is to connect up the facilities there at Fort Peck?

Mr. McPHAIL. It is the substation being served off a low-voltage line that is becoming so loaded we want to make a direct tap on the high-voltage line.

Mr. JENSEN. This $350,000 will complete all those facilities which you have just enumerated?

Mr. McPHAIL. That is right.

I have a statement for the record.

Mr. JENSEN. Yes. Without objection, it will be included in the record.

(The statement referred to follows:)

CONSTRUCTION AND REHABILITATION

The Fort Peck project is located in north central and northeastern Montana, and consists of the electrical facilities necessary to market the power generated at the Fort Peck powerplant. The present powerplant has a capacity of 85,000 kilowatts and was constructed and is operated by the Corps of Engineers, United States Army. A second powerplant of 80,000-kilowatts capacity is being planned by the Corps of Engineers.

Under the provisions of the Fort Peck Project Act, the Bureau of Reclamation is directed to provide, construct, operate, maintain, and improve such transmission lines, substations, and facilities as are found necessary to transmit electrical energy available for sale from the Fort Peck power plant to existing and potential markets. Funds requested for fiscal year 1954 in the amount of $350,000 are needed to continue this work on facilities and features being constructed in accordance with the above directive. These features consist of several transmission lines and substations which will provide service to irrigation pumping projects and REA cooperatives. The only new work to be initiated is on reactive control equipment necessary for more effective operation of the transmission system. System planning will continue.

Construction and Rehabilitation and Operation and Maintenance

HUNGRY HORSE PROJECT, MONTANA

Mr. Jensen. The next item is the Hungry Horse project, Montana. We will insert in the record at this point pages 44, 45, and 46 of the special data requested from the Bureau of Reclamation, pages 384–387 of the construction justification and pages 137–139 of the operation and maintenance justification.

(The pages referred to follow:)

Construction, Operations and Maintenance

Construction

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$89,607,462	$12,700,000	$1,232,149
Unliquidated obligations	582,328	−23,179	−559,149
Total obligations	90,189,790	12,676,821	673,000

Operations and maintenance

	Actual 1952	Estimated 1953	Estimated 1954
Expenditures		$193,000	$340,940
Unliquidated obligations		2,100	2,000
Total obligations		195,100	342,940
Appropriation or estimate		195,100	342,940

History of Project Development

Location

Flathead County in northwestern Montana on the south fork of the Flathead River. The dam site is 5 miles from the confluence of the south fork with the main stem of the Flathead River.

Purpose

To provide electric power generation, flood control, improvement of navigation, and regulation of river flow. Total installed capacity will reach 285,000 kilowatts.

Authorization

Act of June 5, 1944 (58 Stat. 270).

Initial date

Planning, 1944.
Advanced planning, 1946.
Construction, 1946.
Date of functional completion of construction, fiscal year 1954.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1946, $1,700,000.

Costs

Original estimated cost	[1] $48,319,000
Allocation of cost: Unallocated	48,319,000
Present estimated cost	102,900,000
Allocation of cost:	
Power	83,231,000
Flood control	19,669,000

[1] For low dam only.

Amount to be repaid and repayment period

Power, $83,231,000; regular repayment period, 1953 to 2009; total, years: Construction costs allocated to commercial power will be repaid within 50 years from date individual facility becomes revenue producing.

Operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Power (kilowatts)		142,500	285,000	285,000
Average power rates (mills per kilowatt-hour):				
Firm		(1)	(1)	(1)

[1] All power generated for commercial sales is sold by the Bonneville Power Administration. They return an annual revenue to the Bureau to repay the project annual expenses plus amortization.

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Power facilities:			
Actual June 30, 1952			
1953	24		
1954	73		
Regional CPA services:			
Actual June 30, 1952			
1953			.9
1954			1.6
Total:			
Actual June 30, 1952			
1953	24		.9
1954	73		1.6

Other project statistics, see p. BR-140.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$103,539,611
Total obligations to June 30, 1952		90,189,790
Allotment, fiscal year 1953	$12,570,000	
Prior year balance available	106,821	
Total obligations, fiscal year 1953		12,676,821
Allotment, fiscal year 1954		637,000
Total obligations, fiscal year 1954		637,000
Balance to complete		

JUSTIFICATION OF ESTIMATE

Authorization

The dam and facilities for generating electric energy were authorized by the act of June 5, 1944 (58 Stat. 270). Construction of related irrigation works is subject to a report and findings thereon being made by the Secretary of the Interior in accordance with reclamation law.

Location

The project is located in Flathead County in northwestern Montana on the south fork of the Flathead River. The dam site is situated approximately 5 miles from the confluence of the south fork with the main stem of the Flathead River and the reservoir will extend 34 miles upstream from the dam on undeveloped public land of the Flathead National Forest.

Description

The purpose of the project is to provide electric power generation, flood control, improvement of navigation, and regulation of river flow. Major project features include a 564-foot-high concrete arch gravity-type dam and a power plant to house 4 generating units of 71,250 kilowatts each. The 3,500,000 acre-foot reservoir will greatly increase firm power production and potential at all existing and proposed downstream powerplants on the Flathead, Clarks Fork, and Columbia Rivers. Total installed capacity will reach 285,000 kilowatts, with initial production by the first generator scheduled for October 1952.

Repayment

All reimbursable costs will be repaid by revenues from the sale of power. Studies are being continued with the Bonneville Power Administration, designated agency for the distribution and sale of power, and other agencies of the Government leading to final determination of cost allocations for flood control, navigation, and other uses.

Status

Construction was begun May 24, 1946. By June 30, 1952, the dam had been raised to within 60 feet of its ultimate height of 564 feet with the placement of more than 2,850,000 cubic yards of concrete. Work under the two remaining contracts for clearing the reservoir area was nearly complete, with completion assured by the end of the 1952 construction season. The diversion tunnel was closed in September 1951, and by July 1, 1952, the total usable storage in the reservoir had reached 1 million acre-feet, the amount which the Bureau is committed to withhold for later release to downstream powerplants. In the powerplant, installation of turbines was more than 80 percent complete for 3 units and 56 percent complete on unit No. 4. The fabrication, delivery, and installation of generators and other major items of electric equipment in the powerplant and switchyard was proceeding on an orderly schedule to meet the initial power-production goal of October 1952. The first two 71,500-kilowatt generators were placed in service on schedule, on October 1, 1952, and December 1, 1952. As of June 30, 1953, the project will be substantially complete with 2 of the 4 generating units, together with related transmission and switchgear facilities having been placed in service.

Work proposed, fiscal year 1954

The program for fiscal year 1954 provides for the completion of all work under all contracts for construction and completion of the dam, powerplant, switchyard, and appurtenant works; for completion of the relocation of Forest Service facilities to be inundated by the reservoir; for completion of construction and modification of the Government camp and facilities for the use of operation and maintenance forces; and for the disposition of salvage of all temporary facilities not required after the completion of construction. Installation work on the two remaining 71,250-kilowatt generating units will be completed and the units placed in service in August and November of calendar year 1953.

Justification

The urgent need for additional power in the Northwest is evidenced by the fact that applications had been received for the total potential output of electrical energy of the Hungry Horse powerplant a full 2 years before the first generator was scheduled to begin producing power. In addition to the generation of 285,000 kilowatts of firm power on site, Hungry Horse Dam will provide storage for increasing the firm power of downstream powerplants by almost double this

amount, or approximately 500,000 kilowatts. Further benefits will be realized in the form of flood control and improved navigation downstream. Due to the rapid progress of construction to date, if adequate funds are made available, construction will be completed during fiscal year 1954. The Government will realize substantial savings in construction costs, and the benefits to be reaped from the construction of Hungry Horse project will accrue earlier than was originally expected.

The total estimated cost has been reduced from $108,800,000 to $102,900,000 (estimated total obligations $103,539,611). The decrease is an excellent example of the savings which can be effected when the work on a construction program is permitted to proceed in an orderly manner as planned.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Hungry Horse Dam	$61,017,000	$54,040,767	$6,330,000	$646,233	
Relocation of Forest Service facilities	4,786,000	2,438,198	1,922,000	425,802	
Reservoir clearing	8,300,000	7,832,544	467,456		
Hungry Horse powerplant	23,411,000	19,294,381	3,585,000	531,619	
Hungry Horse switchyard	2,298,000	1,418,152	879,848		
General property	3,088,000	2,662,441	142,000	283,559	
Total cost	102,900,000	87,686,483	13,326,304	1,887,213	
Construction facilities		599,588	−268,666	−330,922	
Stores		810,163	−397,638	−412,525	
Transfers, credits, and other expenditures	639,611	511,228	40,000	88,383	
Total expenditures	103,539,611	89,607,462	12,700,000	1,232,149	
Unliquidated obligations		582,328	−23,179	−559,149	
Total obligations	103,539,611	90,189,790	12,676,821	673,000	
Method of financing:					
Allotment, fiscal year 1953			12,570,000		
Prior year balance available			106,821		
Allotment required				673,000	

Operation and Maintenance

Summarized financial data

Total, fiscal year 1952	
Allotment, fiscal year 1953	$195,100
Total obligations, 1953	195,100
Allotment, fiscal year 1954	342,940
Total obligations, 1954	342,940

Justification of Estimate

Location

The project is located in Flathead County in northwestern Montana on the south fork of the Flathead River and lies entirely within the Flathead National Forest. The dam site is a deep, narrow canyon approximately 5 miles southeast of the south fork's confluence with the main stem of the Flathead River; and the reservoir will extend approximately 34 miles upstream.

General conditions

When completed this multipurpose project will provide for electric generation, flood control, and regulation of river flow. Winter releases of water from the 3,500,000 acre-foot reservoir will increase by 385,000 kilowatts the firm power capacity of existing downstream powerplants, and will increase by nearly 500,000 kilowatts the firm power capacities of other powerplants to be installed in the future as part of the full development of the Columbia River system.

The total installed capacity of the 4 generating units will reach 285,000 kilowatts. The first 2 generating units totaling 142,500 kilowatts were placed in operation in October and December 1952.

The entire cost of the project, except allocations to flood control, will be repaid by revenues from the sale of power. Preliminary studies indicate that it may be economically feasible to irrigate approximately 60,000 acres of land near the city of Kalispell, in which eventuality low-cost power from the project will be available for pumping water to the land under consideration.

Work proposed, 1954

	Program 1954	Increase (+) or decrease (−) from 1953
MULTIPURPOSE FACILITIES		
Storage system: For operation and maintenance of Hungry Horse Dam, Reservoir, and outlet works. Increase due to additional regulation resulting from full water storage and full power generation	$23,000	+$4,000
Total obligations, multipurpose facilities	23,000	+4,000
POWER FACILITIES		
Electric generation: For operation and maintenance of the 4 generating units in the Hungry Horse powerplant, 2 of which were placed in operation in fiscal year 1953, and 2 of which are scheduled to be placed in operation during the first half of fiscal year 1954	311,940	+141,840
Transmission expense: For operation and maintenance of transmission and substation facilities. Increase due to full power generation	8,000	+2,000
Total obligations, power	319,940	+143,840
Total obligations, all facilities	342,940	+147,840

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
MULTIPURPOSE FACILITIES			
Operation and maintenance: Storage system		$19,000	$23,000
Total obligations, multipurpose facilities		19,000	23,000
POWER FACILITIES			
Operation and maintenance:			
Electric generation		170,100	311,940
Transmission and distribution expense		6,000	8,000
Total obligation, power		176,100	319,940
Total obligations, all facilities		195,100	342,940
Allocation:			
Power		191,300	338,340
Flood control		3,800	4,600
Total obligations		195,100	342,940
Method of financing:			
Allotment		195,100	
Allotment required			342,940

Mr. JENSEN. You are asking for $673,000 for fiscal year 1954 for Hungry Horse project.

Mr. MARKWELL. Yes. I would like to make a brief statement for the record and say this amount is scheduled to complete the project.

I am happy to call to the attention of the committee that this job will have been completed at a cost over $6 million under the most recent estimates.

Mr. BUDGE. Your original estimate was several million dollars below $102,900,000; was it not?

Mr. MARKWELL. Yes, quite considerably below that.

Mr. BUDGE. So your statement about its being completed $6 million under is simply a revised estimate that you have made within the last few years?

Mr. MARKWELL. Yes, sir. I believe the original estimate of cost on which the authorization was based was predicated on 1940 prices. Then, after the war, when we were authorized to go ahead, the final capacity of the reservoir was determined, and we did make a new estimate of cost, which was carried forward, and was revised from year to year as requested by the committee. We always give you the latest estimate of cost.

I am pointing out that on this particular job we were able to keep it at a cost of some $6 million less than what was anticipated 2 or 3 years ago.

Mr. BUDGE. I make that remark because I noticed at the time President Truman dedicated the Hungry Horse project he made the statement that the project was being completed $6 million under the estimate. So I went back and checked the history of the project, and at the time the new features were added to it, I have forgotten just what the figure was, but it was several million dollars less than the $6 million which you have just mentioned. Actually, it was not built within the estimate which was given at the time the authorization was made for the dam.

Mr. JENSEN. What was the original estimate?

Mr. NORRELL. Mr. Chairman, let me say a word about the Hungry Horse project. When we first had this item up, I recall I was a member of this committee, and I think the chairman was a member when the first construction money was allowed for this project. I recall last year we appropriated a lot of money, over $90 million, to Hungry Horse, and I jokingly said I did not think that old horse ought to be hungry any more. Some of the people out there did not like my remark. They do not like the name of Hungry Horse to be made fun of. So, regardless of how much more money you might appropriate for it, I will not say anything else about that name. It is sacred to the people out there.

I helped get the first construction money to get the project started, and I have always been interested in it. But I just jokingly said the old horse ought not to be hungry any more, it had $90 million. I will not do it any more.

Mr. JENSEN. I asked what the original estimate was. I now have that figure before me. $48,319,000 was the original estimated cost. The present estimated cost is $102,900,000. Construction costs have not risen over 100 percent since that time, so somebody's original estimate must have been a little off, but the project is almost completed.

Will this $673,000 complete the project?

Mr. MARKWELL. That is the best estimate that we can make at this time, and I have no reservations on it myself.

I would like to submit a statement for the record.

Mr. JENSEN. Without objection it will be inserted in the record.

(The statement referred to follows:)

CONSTRUCTION AND REHABILITATION

The progress of work on the Hungry Horse project located in northwestern Montana has been excellent. We intend to complete the project in fiscal year 1954, about 1 full year ahead of the original period of construction and at an approximate savings of about $6 million over the earlier estimates. The dam was brought to its full height in October and the first two units of the power plant were in operation last December. With the funds requested for fiscal year 1954 we expect to place the last 2 generating units on the line this fall, bringing the plant to its full capacity of 285,000 kilowatts. At peak loads this plant will produce 300,000 kilowatts and during normal operation will increase the firm output of downstream plants by some 600,000 kilowatts.

The major construction work at the site is essentially completed; the contractors are performing cleanup work at the dam; installation of the two generating units is proceeding on schedule; reservoir clearing and relocation of Forest Service roads will be completed and construction of the Forest Service ranger station will start as soon as the weather opens. There also remains other minor work to be performed in fiscal year 1954, to bring the facilities up to standard before being turned over to the operation and maintenance forces and in salvaging and disposal of temporary facilities.

This project is an excellent example where the development of natural resources at one site produces downstream benefits of even greater proportion. The output of this plant was committed long before the first generator was in operation and the potentialities of the development were fully recognized as is evidenced by the construction of new generating plants by private utilities to utilize the downstream regulated river flow.

OPERATION AND MAINTENANCE OF POWER FACILITIES

Mr. MCPHAIL. We also have an operation and maintenance item for Hungry Horse project. May I put a statement in the record on that?

Mr. JENSEN. Yes, without objection.

(The statement referred to follows:)

OPERATION AND MAINTENANCE

A general description of this project is contained in the construction statement previously furnished this committee.

An allotment of $342,940 is requested in fiscal year 1954 for the operation and maintenance of Hungry Horse Dam and Hungry Horse powerplant and switchyard with a generating capacity of 285,000 kilowatts. $4,600 of the above allotment is for flood-control operations and maintenance.

The fiscal year 1954 allotment request is $147,840 greater than that for fiscal year 1953, due primarily to the placing of 2 additional units in the powerplant in operation in early fiscal year 1954 and for initial full-year operation of the first 2 units that were placed in operation in the second quarter of fiscal year 1953.

CONSTRUCTION AND REHABILITATION

VERMEJO PROJECT, NEW MEXICO

Mr. JENSEN. We will turn to the next item, the Vermejo project, New Mexico. We will insert in the record at this point pages 47, 48, and 49 of the special data requested from the Bureau of Reclamation and pages 389–392 of the justifications.

(The pages referred to follow:)

Vermejo project, New Mexico

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$35,804	$656,195	$1,472,000
Total obligations	35,804	656,195	1,472,000

HISTORY OF PROJECT DEVELOPMENT

Location

Near the town of Maxwell, Colfax County, in northeastern New Mexico.

Purpose

Irrigation, flood control, fish and wildlife.

Authorization

Act of September 27, 1950 (Public Law 848, 81st Cong.). In accordance with section 3 of that act, the President on June 22, 1951, approved the project report. The original act was amended by act of March 5, 1952 (Public Law 269, 82d Cong.).

Initial date

Planning, 1945.
Advanced planning, November 1951.
Construction, 1953.
Date of functional completion of construction, fiscal year 1955.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1952, $285,000.

Costs

Original estimated cost	$2,679,100
Allocation of cost (unallocated)	2,679,100
Present estimated cost	2,919,000
Allocation of cost:	
Irrigation	2,700,000
Flood control	55,000
Fish and wildlife	198,000
Unallocated decrease	−34,000

Repayment

Status of repayment contract negotiations: Repayment contract executed with Vermejo Conservancy District for payment of $2,010,080 over a 76-year period.
Amount to be repaid and repayment period: Irrigation, $2,010,080; regular repayment period, 1962 to 2037; development, 7 years; total, 83 years.

Repayment of costs allocated to irrigation

Water users	$2,010,080
Nonreimbursable (pursuant to act of Sept. 27, 1950)	689,920
Total	2,700,000

Repayment costs per acre

Federal investment, per acre		$375.00
Nonreimbursable		96.00
From irrigators		279.00
Annual water-user charges:		
Construction	$3.70	
Operation and maintenance	3.00	
		6.70

Gross crop income per acre resulting from project irrigation, $50.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres) full				7,020
Total				7,200

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$2,832,037
Total obligations to June 30, 1952		35,804
Prior year balance available	$656,195	
Total obligations, fiscal year 1953		656,195
Allotment, fiscal year 1954	$1,472,000	
Total obligations, fiscal year 1954		1,472,000
Balance to complete		668,038

JUSTIFICATION OF ESTIMATE

Authorization

The project was authorized by the act of September 27, 1950 (Public Law 848, 81st Cong.). In accordance with section 3 of that act, the President, on June 22, 1951, approved the project report. The original act was amended by act of March 5, 1952 (Public Law 269, 82d Cong.).

Location

The project is located near the town of Maxwell, Colfax County, in northeastern New Mexico, on the Vermejo River, which is a part of the headwaters of the Canadian River.

Description

This project will provide for the rehabilitation of irrigation facilities for 7,200 acres of land in the Vermejo Conservancy District. The water supply will be stabilized by the enlargement of reservoir No. 2, Stubblefield Dam and Reservoir, reservoir No. 13, and the reconstruction of reservoir No. 12. The existing Vermejo diversion dam, Vermejo Canal, Eagle Tail Canal, lateral system, and drainage system will be rehabilitated.

Repayment

A repayment contract covering the reimbursable portion of the project cost was executed August 7, 1952. The water users will be required to repay an amount not to exceed $2,010,080 of the project costs allocated to irrigation. This amount will be repaid in about 76-year period in variable annual payments on the basis of a formula stated in the proposed contract.

Status

Preconstruction activities were initiated in November 1951 but were discontinued in January 1952 when project funds were impounded. Preconstruction activities were again initiated early in fiscal year 1953 after release of the impounded funds and the appropriation of additional funds. Construction of reservoir and dam No. 2, Stubblefield Dam and Reservoir, and reservoir and dam No. 13 will be initiated in fiscal year 1953.

Work proposed, fiscal year 1954

The program for fiscal year 1954 includes continuation of construction on reservoir and dam No. 2, Stubblefield Dam and Reservoir, and reservoir and dam No. 13. Construction will be initiated on the Vermejo Diversion Dam, Vermejo Canal, Eagle Tail Canal, lateral system, and drainage system.

Justification

In its present condition, the existing project is no longer self-sustaining, and the resources of local interests are insufficient for installation of necessary improvements. Continued existence of the project area as a social and economic unit depends upon completion of the rehabilitation and construction of the project as scheduled. The proximity of the project to permanent defense installations in northern New Mexico makes it necessary that available water resources be utilized to provide fresh food for the increased population and forage crops for livestock in this area.

The total estimated cost of the Vermejo project has been increased from $2,664,000 to $2,919,000 (estimated total obligations, $2,832,037), in order to cover increases in costs of materials and labor that have occurred between April 1950 and April 1952.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Reservoir and dam No. 2	$340,000	$6,403	$116,000	$182,000	$35,597
Stubblefield Dam and Reservoir	1,288,000	25,016	376,000	685,000	201,984
Reservoir and dam No. 12	128,000				128,000
Reservoir and dam No. 13	381,000		110,000	231,000	40,000
Vermejo Diversion Dam	35,000		5,000	18,000	12,000
Vermejo Canal	255,000		11,195	136,000	107,805
Eagle Tail Canal	97,000		7,000	54,000	36,000
Laterals	197,000		7,000	109,000	81,000
Surface drains	67,000		6,000	40,000	21,000
Subsurface drains	131,000				131,000
Total cost	2,919,000	31,419	638,195	1,455,000	794,386
Construction facilities		1,176	18,000	10,000	−29,176
Project investigations		120,963			−120,963
Operation and maintenance during construction	15,000			7,000	8,000
Transfers, credits and other expenditures	−101,963	−117,754			15,791
Total expenditures	2,832,037	35,804	656,195	1,472,000	668,038
Total obligations	2,832,037	35,804	656,195	1,472,000	668,038
Method of financing:					
Prior year balance available			656,195		
Allotments required				1,472,000	668,000

Mr. JENSEN. This was a project that was started in fiscal 1953, and you are asking $1,472,000 for that project for 1954.

Mr. MARKWELL. Yes, sir.

Mr. JENSEN. The original estimate was $2,679,100, and the present estimate is $2,919,000. Will you make a statement on that?

Mr. MARKWELL. I have a brief statement to make.

(The statement referred to follows:)

CONSTRUCTION AND REHABILITATION

Bueau activities on the Vermejo project will provide a firm irrigation-water supply to 7,200 acres. Preconstruction work on this project was again initiated early in fiscal year 1953 after the release of impounded funds and the appropriation of additional funds. A repayment contract has been executed, designs, and specifications have been prepared and bids were opened in late January for the start of construction on the dams and reservoirs. These first bids were very favorble and it is expected to proceed with work immediately. A few remaining minor contracts will also be entered into this fiscal year.

The work proposed in fiscal year 1954 will consist of continuance of work on the dams and reservoirs and start of rehabilitation work on the Vermejo diversion dam and the canals, laterals, and drains in the project area. No difficulty in construction is anticipated and all activities are scheduled in the most economical manner. All remaining work is programed for completion in the following year in order that the project will become economically self-sustaining and can, through supplying food for the increased population in the area, make a real contribution to defense efforts. Full accomplishment of the proposed fiscal year 1954 program will be necessary to realize completion as scheduled in fiscal year 1955.

Summarizing, since the chairman has mentioned the increase in cost, I would like to state that that represents roughly the increase in cost of materials and labor for the period April 1950 to now.

Mr. JENSEN. I notice under the contract the water users will pay back $2,700,000 over a long period of years, 83 years. Well, it is a going project.

Mr. NORRELL. That other project, I notice your repayment contract is for a period of 76 years. What is the maximum time on a project?

Mr. LINEWEAVER. That was fixed by statute, Mr. Norrell.

Mr. NORRELL. All right.

Mr. LINEWEAVER. I may say, Mr. Chairman, that the ground-breaking ceremonies on that Vermejo project is set for April 7. I think you have an invitation to be present at that time.

Mr. JENSEN. I think so, but I cannot be, because I have things to do on the job for which I am paid at that time. I would like to be there, of course, but it is out of the question.

CONSTRUCTION, REHABILITATION, OPERATION, AND MAINTENANCE

RIO GRANDE PROJECT—POWER DIVISION, NEW MEXICO–TEXAS

Mr. JENSEN. Now we take up the Rio Grande project, power division, New Mexico and Texas. We will insert in the record at this point the special data requested from the Bureau of Reclamation, including pages 50, 51, 52, and 53.

There will also be inserted in the record pages 394–399 of the construction justification, and pages 161–167 of the operation and maintenance justification.

(The pages referred to follow:)

CONSTRUCTION AND OPERATIONS AND MAINTENANCE

Construction

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$15,273,658	[illegible]3,725	$545,500
Unliquidated obligation	104,717	−104,717	
Total obligations	15,378,375	139,008	545,500

Operations and maintenance

	Actual 1952	Estimated 1953	Estimated 1954
Expenditures	$1,763,411	$2,209,300	$2,228,594
Unliquidated obligations	−1,415	1,000	4,000
Total obligations	1,761,996	2,210,300	2,232,594
Less funds advanced by water users	969,456	1,013,000	1,035,000
Unobligated balance	78,560		
Appropriation or estimate	871,100	1,197,300	1,197,594

HISTORY OF PROJECT DEVELOPMENT

Location

Central and south-central New Mexico extending from Albuquerque to Las Cruces.

Purpose

To provide irrigation, power, flood control and international river control.

Authorization

By Secretary of the Interior December 2, 1905. Funds for Elephant Butte Dam authorized by Sundry Civil Expenses Appropriation Act, 1908 (Public Law 253, 59th Cong., 2d sess.) Construction of power system was authorized under PWA Appropriation Act of 1938.

Initial date

Planning, 1903; advanced planning, 1905.

Constructional of project, 1906; of power system, 1938.

Date of functional completion of construction: fiscal year 1956 fiscal year and amount of initial allotment of appropriations for construction: fiscal year 1905, $200,000.

Costs

Original estimated cost	[1]$8,905,400
Allocation of cost:	
Irrigation	----------
Power	----------
Flood control	1,510,654
Mexican Treaty	1,000,000
Unallocated	6,394,746
Present estimated cost	[1]16,572,778
Allocation of cost:	
Irrigation	4,049,106
Power	10,048,408
Flood control	1,510,654
Mexican Treaty	1,000,000
O. and M. for flood and river control	37,510
Contribution, Department of Justice	10,960
Unallocated net decrease	83,860

[1] Power Division only. Irrigation features were completed period to period for which allocations were made.

Repayment

Status of repayment contract negotiations.

Amount to be repaid and repayment period

	Amount	Repayment period		Total
		Regular	Development	
Irrigation [1]	$4,049,106	1941-65	----------	25 years.
Power	10,048,408	1941-2009	----------	([2])

[1] Irrigation allocation will be paid entirely from power revenues.

[2] Construction costs allocated to commercial power will be repaid within 50 years from date individual facility becomes revenue producing.

Repayment of costs allocated to irrigation

Power: Interest component, $4,049,106.

Repayment costs per acre

Federal investment per acre	$26
From power revenue	26
Annual water user charges:	
Construction	-----
Operation and maintenance	-----
Total	-----

Income per acre resulting from project irrigation (calendar year 1951), $300.

OPERATIONS

Schedule of operations

	Initial operation		Through—fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
	Date	Number				
Irrigation (acres):						
Full			159,650	159,650	159,650	
Supplemental			18,353	18,350	18,350	
Total	1908	25,000	178,003	178,003	178,000	196,000
Power (kilowatts)			24,300	24,300	24,300	24,300
Power rates:						
(Mills per kilowatt-hour):						
Firm, at 50 percent load factor			7.1	7.1	7.1	7.1
Nonfirm						3.3

Personnel: Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Irrigation facilities:			
Actual, June 30, 1952	260	12	
1953	263	5	
1954	376	6	
Power facilities:			
Actual, June 30, 1952	(47)		
1953	(50)	(1)	
1954	(50)	(1)	
Joint facilities:			
Actual, June 30, 1952	(20)	(5)	
1953	(20)	(1)	
1954	(20)	(1)	
Denver office:			
Actual, June 30, 1952			(0.7)
1953			(.8)
1954			(.8)
Regional CPA services:			
Actual, June 30, 1952			(3.6)
1953			(5.2)
1954			(1.4)
Total:			
Actual, June 30, 1952	327 (67)	18 (5)	(4.3)
1953	433 (70)	7 (2)	(6.0)
1954	446 (70)	8 (2)	(2.2)

NOTE.—Figures in parentheses indicate number of personnel financed from direct appropriations.

Other project statistics, see p. BR-166.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$16,665,083
Total obligations to June 30, 1952	15,378,375
Allotment, fiscal year 1953	80,819
Prior-year balance available	74,689
Balance available in subsequent year	−16,500
Total obligations, fiscal year 1953	139,008
Allotment, fiscal year 1954	529,000
Prior-year balance available	16,500
Total obligations, fiscal year 1954	545,500
Balance to complete	602,200

JUSTIFICATION OF ESTIMATE

Authorization

The Rio Grande project was authorized by the Secretary of the Interior December 2, 1905.

Location

The project is located in central and south-central New Mexico. Project works extend from Albuquerque, N. Mex., on the north to the city of Las Cruces, N. Mex., on the south, and from Silver City, N. Mex., on the west to the town of Hollywood, N. Mex., on the east.

Description

The primary purpose of the Rio Grande project upon its initial authorization was to provide a full supply of irrigation water to the irrigable portion of the valley of the Rio Grande lying south of the Percha Diversion Dam and north of the Hudspeth County line in the State of Texas. The power system, the only portion of the project now in construction status consists of one power plant and switchyard at Elephant Butte Dam, and transmission lines and substations serving the towns of Hot Springs, Deming, Central, Silver City, Las Cruces, Alamogordo, Hollywood, Socorro, Belen, Willard, Albuquerque, N. Mex., El Paso, Tex., and the military establishments at White Sands and Holloman Air Base, N. Mex. The power system has a designed capacity of 24,300 kilowatts.

Repayment

Repayment of construction costs of the power system of the Rio Grande project is made from revenues obtained from the sale of electric energy.

Status

Construction of the power system was begun in 1938. On June 30, 1952, the project features were 92 percent complete. The only incomplete items on June 30, 1953, will be the installation of overhead ground wires on the transmission lines not now so equipped and the installation of high-voltage switching facilities at the Albuquerque substation. The installation of the Elephant Butte water treatment plant will be completed, and work prerequisite to issuing construction specifications for the installation of overhead ground wires will be performed in fiscal year 1953.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes initiation of installation of overhead ground wires on about 364 miles of 115-kilovolt transmission lines, installation of metering equipment, and the initiation of designs for the high-voltage switching facilities at the Albuquerque substation. Installation of overhead ground wires is expected to be completed on about 200 miles of transmission lines during the year.

Justification

Overhead ground wires have been installed on approximately 135 miles of the 499 mile transmission system. The installation of overhead ground wires on the approximate 364 miles of transmission lines not now so equipped is necessary because the system has been greatly expanded and connections have and are being made with other high-voltage military and commercial power systems which utilize the overhead ground wire method of protecting the system from lightning and other faults.

Design work on the high voltage switchyard at the Albuquerque substation is necessary in order that installation work may be started in the following year.

The power system is presently connected with, and is serving, the Public Service Co. of New Mexico at the Albuquerque substation. After completion of construction now in progress by RTA cooperatives, the Bureau will also be connected at the Albuquerque substation with the 30,000 kilowatt Algondones steam plant and 115-kilovolt transmission system of the Plains Electric Transmission and Generation Cooperative, and the Albuquerque-Grants 115-kilovolt transmission line of the Continental Divide Electric Cooperative. By wheeling over the Rio Grande project's system south from Albuquerque, the Plains Cooperative will serve five of its member cooperatives which are connected to the Bureau's system and will also serve the Continental Divide Cooperative from Albuquerque. In addition, the Bureau will purchase surplus power from the Plains system at Albuquerque for delivery to Rio Grande project customers. For supplying adequate service and service continuity in keeping with Bureau and industry standards, high vol-

tage switching facilieits will be installed at the Albuquerque substation including four 115-kilovolt oil circuit breakers and five switching bays to provide the necessary interconnections between the Bureau and the cooperatives and for protection to the Public Service Co. of New Mexico. Two of the oil circuit breakers and switching bays constitute terminal facilities of the cooperatives' lines; however, in lieu of construction by the cooperatives, these two oil circuit breakers and bays will also be furnished, constructed, and operated by the Bureau. The cooperatives, at their request, will reimburse the Bureau at a rate of six-tenths of 1 percent per month for the actual investment in these particular facilities.

The total estimated cost of the project has been increased from $15,198,919 to $16,572,778 (anticipated total obligations $16,665,083) primarily due to the necessity of programing additional work. Additional work includes the construction of water treatment facilities, extension of the project overhead ground wire system, and installation of high voltage switching facilities at the Albuquerque substation.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Elephant Butte Dam and Reservoir	$5,551,905	$5,551,905			
Caballo Dam and Reservoir	2,337,786	2,337,786			
Elephant Butte powerplant	1,406,440	1,406,440			
Transmission line, substations, and switchyards	1,625,893	1,622,520	$3,373		
General property, Elephant Butte	622,511	622,511			
Elephant Butte switchyard	388,935	369,935	19,000		
Dona Ana substation	98,430	88,415	10,015		
Albuquerque substation	759,800	335,408	31,185	$11,807	$381,400
Willard substation	232,137	157,209	74,928		
Elephant Butte-Socorro transmission line	662,871	572,571	5,000	85,300	
Holloman Air Base substation	68,690	49,871	18,819		
Holloman Air Base-Hollywood transmission line	470,913	373,913	4,000	93,000	
Belen-Willard transmission line	520,785	514,114	6,671		
Deming substation	129,384	114,884	14,500		
Elephant Butte-Las Cruces transmission line	325,340	177,340	7,000	71,300	69,700
Las Cruces substation	44,425	38,325	6,100		
Elephant Butte-Deming transmission line	406,215	243,522	7,000	45,193	110,500
Deming Central transmission line	219,296	130,296	4,000	29,400	55,600
Central substation	118,060	114,860	3,200		
Dona Ana-Holloman transmission line	537,962	350,962	7,500	179,500	
General property, Elephant Butte water treatment plant	45,000		45,000		
Total cost	16,572,778	15,172,787	267,291	515,500	617,200
Construction facilities		7,597	−7,597	30,000	−30,000
Stores		70,677	−70,677		
Transfers, credits, and other expenditures	92,305	22,597	54,708		15,000
Total expenditures	16,665,083	15,273,658	243,725	545,500	602,200
Unliquidated obligations		104,717	−104,717		
Total obligations	16,665,083	15,378,375	139,008	545,500	602,200
Method of financing:					
Allotment, fiscal year 1953			80,819		
Prior-year balance available			74,689	16,500	
Balance available in subsequent year			−16,500		
Allotments required				529,000	602,200

OPERATION AND MAINTENANCE

Summarized financial data

Total, fiscal year 1952	$1,761,996
Fiscal year 1953:	
Allotment	1,197,300
Funds advanced by water users	1,013,000
Total obligations, fiscal year 1953	2,210,300
Fiscal year 1954:	
Allotment	1,197,594
Funds advanced by water users	1,035,000
Total obligations, fiscal year 1954	2,232,594

JUSTIFICATION OF ESTIMATE

Location

The Rio Grande project comprises an area of roughly 28,800 square miles, lying in the counties of Bernalillo, Torrence, Valencia, Socorro, Sierra, Grant, Luna, Dona Ana, Otero, and Lincoln, in the State of New Mexico, and El Paso in the State of Texas. By far the largest part of the project lies within the basin of the Rio Grande. A small part of the Alamogordo-Hollywood transmission line, lying in Lincoln County, N. Mex., is in the Pecos River Basin. A portion of the Elephant Butte-Deming-Central transmission line lies in the Mimbres River Valley, a closed basin, and a third small part of the Belen-Willard transmission line lies in a closed basin of the Estancia Valley. The project headquarters is in the city of El Paso, Tex., 125 miles south of the Elephant Butte Dam. The city of Albuquerque, N. Mex., is the most northerly reach of the transmission system and lies some 140 miles north of the Elephant Butte Dam. The irrigable area of the project lies entirely south of the Elephant Butte Dam whereas the transmission line network covers the entire project.

General conditions

The Rio Grande project is one of the oldest in the Bureau of Reclamation, having been approved by the Secretary of the Interior on December 2, 1905. The irrigation division with an area of 160,000 acres is fully developed and the expenses thereof are those incident to normal operation and maintainence, with some funds being expended in improvement of temporary structures and an occasional extension of canals, laterals, or drains. There are 6 diversion dams or main canal headings; 617 miles of diversion and distribution canals and 470 miles of drainage ditches; with approximately 10,000 appurtenant structures. Two storage reservoirs are operated by the power division. The extremely long and narrow geographical shape of the irrigation division, being approximately 141 miles long and of varying width up to 5 miles, creates a comparatively difficult transportation problem. While the network of roads is excellent, the long distances from headquarters and field yards require a larger fleet of service cars and trucks than would otherwise be necessary.

The irrigation division expenses are financed through funds advanced by the water users, there being two organizations, the Elephant Butte Irrigation District comprising all lands within the State of New Mexico, and the El Paso County Water Improvement District No. 1, those lands lying within the State of Texas. In addition to the above, the project is required by international treaty to furnish 60,000 acre-feet annually to the Juarez Valley, Republic of Mexico, and has a Warren Act contract covering excess and waste waters with the Hudspeth County Reclamation and Conservation District, Hudspeth County, Tex., which has an irrigable area of 19,000 acres.

Construction of the power divisison commenced in 1938 with the first power delivery being made in December 1941, and is still continuing with construction of the extension of the transmission system. There is one powerplant, consisting of three 9,000 kilovolt-ampere units, located at Elephant Butte Dam from which 499 miles of 115 kilovolt transmission lines radiate in all directions. Deliveries are made through 13 substations, 12 of which are maintained by the project for service to 3 private utility companies, 6 public-owned utilities, and 2 military defense establishments. The transmission lines traverse extremely rough, iso-

lated terrain, and the inspection and maintenance thereof is over patrol roads constructed and maintained by the Bureau. The rough character of the country, plus the dry character of the weather, result in a continual struggle to maintain the transmission lines in a taut shape. The cost of operating the power division is appropriated from funds received from power revenues.

Work proposed, 1954

	Program, 1954	Increase (+) or decrease (−) from 1953
MULTIPURPOSE FACILITIES		
Storage system: For the continuation of normal operation and maintenance of Elephant Butte and Caballo Dams and Reservoirs. Increase due to increased labor and material costs	$81,576	+$6,829
Replacements and improvements: To provide for replacement and improvement to reservoirs, dams, and waterways, and to provide for purchase and replacement of heavy equipment. Decrease due to decrease in replacements and improvements needed	34,924	−23,929
Total obligations—multipurpose	116,500	−17,000
IRRIGATION FACILITIES		
Carriage system: For the continuation of normal operation and maintenance of the Percha, Leasburg, and Mesilla diversion dams, and the Franklin, Riverside, and Tornillo headings. Net decrease results from decreased maintenance believed required in fiscal year 1954 which will be offset partially by increased labor and material costs	38,580	−6,992
Distribution system: For the continuation of normal operation and maintenance of the project canal and lateral system. Increase due to increased maintenance and to increased labor and material costs	663,775	+18,516
Drainage system: For the continuation of normal operation and maintenance of drainage system. Increase due to increased maintenance and to increased labor and material costs	53,955	+6,606
Replacements and improvements: To provide for the replacement of wornout timber structures on the canals, laterals, and drains, and the purchase of additional heavy equipment, and the replacement of obsolete and wornout heavy equipment	278,690	+3,870
Total obligations—irrigation	1,035,000	+22,000
POWER FACILITIES		
Electric generation: To provide for continuation of operation and maintenance of the Elephant Butte powerplant	64,680	+735
Other production expense: To provide for the purchase of electric energy for resale to firm power contractors	859,766	−184
Transmission and distribution expense: To provide for the continued operation and maintenance of transmission lines and substations	78,970	+1,270
Replacements and improvements: To provide for the replacement of heavy equipment and the purchase of mobile radio equipment. Increase is due to deferred purchases and replacements from fiscal year 1953	77,678	+15,473
Total obligations—power	1,081,094	+17,294
Total obligations—all facilities	2,232,594	+22,294

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
MULTIPURPOSE FACILITIES			
Operation and maintenance storage system	$38,155	$74,747	$81,576
Replacements and improvements	65,365	58,753	34,924
Total obligations, multipurpose	103,520	133,500	116,500
IRRIGATION FACILITIES			
Operation and maintenance:			
Carriage system	40,110	45,572	38,580
Distribution system	578,788	645,259	663,775
Drainage system	59,350	47,349	53,955
Replacements and improvements	291,208	274,820	278,690
Total obligations, irrigation	969,456	1,013,000	1,035,000
POWER FACILITIES			
Operation and maintenance:			
Electric generation	61,483	63,945	64,680
Other production expense	536,066	859,950	859,766
Transmission expense	63,511	77,700	78,970
Replacements and improvements	27,960	62,205	77,678
Total obligations, power	689,020	1,063,800	1,081,094
Total obligations, all facilities	1,761,996	2,210,300	2,232,594
Allocation:			
Irrigation	1,025,358	1,085,090	1,097,910
Power	713,865	1,095,840	1,109,054
Flood control	12,422	16,020	13,980
International river control	10,351	13,350	11,650
Total obligations	1,761,996	2,210,300	2,232,594
Method of financing:			
Allotment	871,100	1,197,300	
Unobligated balance	−78,560		
Allotment required			1,197,594
Funds advanced by water users	969,456	1,013,000	1,035,000

Project statistics

Feature or item	Unit	Actual, fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
Irrigation system:				
Irrigable area:				
Full irrigation	Acres	159,650	159,650	159,650
Supplemental irrigation	do	[1] 18,353	18,350	18,350
Total		178,003	178,000	178,000
Cultivated area	do	156,795	160,000	160,000
Gross crop value	Dollars	45,842,490	47,000,000	48,000,000
Average gross crop value per cultivated acre.	do	292	242	225
Storage dams and reservoirs	Number	2	2	2
Diversion dams [2]	do	5	5	5
Canals	Miles	147	147	147
Laterals	do	470	470	470
Drains	do	490	490	490
Operating roads	do	470	470	470
Power system:				
Annual sales	Kilowatt-hours	107,842,909	188,700,000	218,500,000
Total power revenues	Dollars	$712,311	$1,286,900	$1,427,500
Power plants	Number	1	1	1
Plant capacity	Kilowatts	24,300	24,300	24,300
Patrol roads	Miles	300	435	435
Transmission lines	do	443	499	499
Substations	Number	[3] 13	[3] 14	[3] 14

[1] Suspended or non-water-right land susceptible of cultivation.
[2] 1 diversion dam, the American diversion dam, is owned, operated, and maintained by the International Boundary and Water Commission.
[3] Includes 13-kilowatt substation at Truth or Consequences not now beingnsed for normal power deliveries.

Mr. McPHAIL. I will submit a statement for the record, Mr. Chairman.

INSTALLATION OF OVERHEAD GROUND WIRES

The work involved in connection with the requested $529,000 this year is the continuation of the installation of overhead ground wires on the system.

Mr. JENSEN. Without objection, your statement may be inserted in the record.

(The statement referred to follows:)

CONSTRUCTION AND REHABILITATION

The Rio Grande project has approximately 500 miles of transmission lines linking the powerplant at Elephant Butte with other systems in the area and distributing power to both private and public consumers. Because of its greatly expanded system and the fact that connections are being made with other high-voltage military and commercial facilities, it is necessary that protection from lightning and other faults be provided. The Bureau is now designing and installing an overhead ground wire protective system for the transmission network. Approximately 135 miles of line have now been completed and it is essential that the same protection be provided on the remaining lines as soon as possible.

Preliminary work is under way at the present on securing design data, preparing specifications and other necessary activities leading to award of contracts in fiscal year 1954 for the installation of the remainder of the overhead ground wires.

In addition, design and specifications will be prepared during fiscal year 1954 for the construction of an addition to the present Albuquerque substation, one of the major switching stations in this power system, to provide for switching and interconnections with other systems in the area. It is anticipated that this preliminary work will be substantially completed in fiscal year 1954 in order that contract awards for the substation addition can be made in early fiscal year 1955.

The Bureau's transmission line system interconnects with REA cooperatives and private systems in New Mexico. Agreements have been made for wheeling power and for the purchase of and distribution of surplus power from the Plains Cooperative System at Albuquerque for delivery to Rio Grande project customers. It is necessary, and with the $529,000 requested for fiscal year 1954, we will provide for maintaining the continuity of service without disruption from short circuits or other faults in the system. The overhead ground wires now being installed, as well as the additions to substations will accomplish this. The substation additions will be paid for by the cooperatives monthly on the basis of actual investment.

WATER SALVAGE

Mr. JENSEN. We have been hearing about the severe drought conditions in New Mexico and the Rio Grande area. What emergency water salvage work has been carried out in that area?

Mr. LINEWEAVER. We have been working in two areas under the emergency appropriation for rechannelization under the middle Rio Grande project. The progress made there is such that we believe the records indicate that something like 50,000 acre-feet will be saved annually by the work already done. I will put a statement in the record that will give more details on that.

Mr. JENSEN. So some accomplishments have been made in the way of water salvage?

Mr. LINEWEAVER. Yes, sir, and that will be more effective this season, when the indications are that the water runoff on the Rio Grande will not be much, if any, better this year than last year. So the 50,000 acre-feet made available through this emergency work will be of great benefit to the Rio Grande project, which is one of Reclamation's oldest, and lies in New Mexico and Texas.

Mr. JENSEN. Congressman Jack Dempsey of New Mexico is greatly interested in this project, as he is in all the things pertaining to his people, and he has visited with me, not only recently but in past years, about the terrific problem which exists in the Rio Grande Valley, which I know is a fact because of my visitations to that valley.

Now, what is the relationship of water salvage to the Rio Grande compact deliveries, and has this delivered water to the farmers in the valley?

Mr. LINEWEAVER. We know Congressman Dempsey is much interested. The program has accomplished two purposes, Mr. Chairman. This emergency work that has been done will enable New Mexico to reduce the debit that has accrued against her by reason of the low runoff on the Rio Grande, and will prevent greater increases. It will not eliminate altogether the debit, which now amounts to about 331,000 acre-feet, and in 1952 it was indicated it would increase another 116,000 acre-feet.

We are told this emergency rechannelization will decrease this debit. The second result is to provide more irrigation water for the Rio Grande project in New Mexico and Texas.

Mr. JENSEN. We have a Federal responsibility, so far as furnishing water to New Mexico is concerned, do we not, on this project?

Mr. LINEWEAVER. Yes, sir.

The Rio Grande is an international stream, as well as a very vital interstate stream, and the treaty requirements require also that we provide water for Mexico, but the immediate matter down there that is the most sensitive is the controversy between the State of New Mexico and Texas where they are now engaged in lawsuits against each other on the use of the waters of the Rio Grande.

The Department of the Interior is trying not to get caught in the middle of this interstate fight. Our engineering and hydrological effects are cooperating with both sides in an effort to work out the problem.

The Middle Rio Grande project, which was authorized several years ago, and on which we had this emergency water-salvage program for the last 2 years, has been and will be a contributing factor to not only benefiting the reclamation projects, but in allaying the differences between the two States about a very important project. However, if the project goes ahead in accordance with these questions that are asked, or the responses to these questions, then there would be a material contribution to the settlement of the controversy, as well as to provide more water for irrigation.

(Discussion off the record.)

(Questions and answers related to the discussion follow:)

MIDDLE RIO GRANDE EMERGENCY WATER SALVAGE AND CONSERVATION PROGRAM

Mr. JENSEN. We have been hearing about the severe drought conditions in New Mexico and elsewhere. What are the prospects of water supply for this year?

Mr. LINEWEAVER. The outlook for water in the middle Rio Grande for this year is very poor. The forecast for this season is for much below normal runoff.

Mr. JENSEN. Last year money was made available to carry out some water-salvage work on the Rio Grande in New Mexico. What work has been done up to the present?

Mr. LINEWEAVER. The President and the Congress recognized this problem. Appropriations Committees in fiscal year 1952 directed that $1,463,000 be made available by the Secretary of the Interior for middle Rio Grande construction from unexpended funds of the Bureau of Reclamation. In fiscal year 1953 there

was an allotment of $2,050,000 approved by Congress in addition to a carryover of $513,889. The $2,050,000 allotment was made up of $1,538,000 of new funds plus $512,000 of pooled unobligated funds of other projects. These funds were made available to reduce water losses where they appeared to be greatest. Work began in the San Marcial area covering about 37 miles of channel. It is now in progress and will be completed in fiscal year 1954, with funds already available. The bids received on this work were so favorable that work can be completed for $500,000 less than our original estimates.

We have been authorized to use $300,000 of these funds for additional channelization work near Bernardo and for eradication by chemical spraying of dense growths of salt cedars and willows near the river. The Bernardo work covers 7 miles and is well under way.

Mr. JENSEN. What has that work accomplished in the way of water salvage?

Mr. LINEWEAVER. The work being done near San Marcial will result in an annual water saving of about 40,000 acre-feet of water. The additional channel work being done near Bernardo, coupled with the chemical spraying, will save about 10,000 acre-feet of additional water. These figures are probably conservative because the work already completed near San Marcial has produced greater savings than were anticipated.

Mr. JENSEN. What is the relationship of water salvaged to the Rio Grande compact deliveries and has this work relieved the water shortages to the farmers in the valley?

Mr. LINEWEAVER. Despite the water savings there is still an urgent need for further water-salvage measures. At the end of 13 years, December 31, 1951, according to computations by the compact commissioners of Colorado, New Mexico, and Texas, New Mexico had an accrued debit of 331,800 acre-feet and in 1952 it is indicated that the debit would increase another 116,000 acre-feet. The State of Texas has brought suit against New Mexico in the Supreme Court of the United States asking, among other things, that New Mexico be prohibited from using any water until the debt is paid off. The compact also involved an international obligation. This obligation requires delivery of water to the Republic of Mexico.

The work accomplished has assisted the farmers in the valley and it is estimated that the value of the water saved to the Middle Rio Grand project, to the Elephant Butte powerplant, and to the Rio Grande project near El Paso, Tex., is estimated to range from $35 to $59 per acre-foot. On the basis of the minimum of $35 and 42,000 acre-feet saved for about the first construction would amount to a total of $1,470,000. On the basis of the maximum of $59 it would amount to $2,478,000.

The amount of work accomplished was not sufficient to relieve the water shortages to any extent because of the prolonged drought and because of other areas which are continuing to consume large quantities of water.

Mr. JENSEN. Are there other areas where water is being lost?

Mr. LINEWEAVER. There are still many channel areas where water could be salvaged at reasonable cost. Some of these are now under study and our studies to date show that the work is feasible.

Mr. JENSEN. What would be the type of work and where could such work be done in order to recover additional waters which would help to reduce the shortages to the farmers?

Mr. LINEWEAVER. Such work includes about 16 miles of river channelization and about 18 miles of drainage improvement. About half of this can be financed from funds already available.

The areas under consideration for additional water-salvage construction are shown on the map and are briefly described as follows:

San Antonio area

This work would consist of the construction riverside drain along the east side of the river below San Antonio to eliminate about 2,000 acres of swampy lowlands. This work would also include improvements to the existing levee on the west side of the river to reduce water seepage through the levee and some flood danger.

Fort Craig area

Construction of a drain from Fort Craig to the Narrows near the west edge of the floodplain would lower the water table in the area west of our conveyance channel and convey occasional arroyo inflows to the constructed emergency San Marcial Channel near its lower end.

Narrows area

Additional water savings would be made by extending the recently completed conveyance channel to the vicinity of the Narrows. This channel would be much smaller than the conveyance channel but would prevent spreading of low flows which results in high evaporation losses.

Tiffany area

Flows from the outlet drain from the Bosque Del Apache Wildlife Refuge spread out into a heavy "bosque" growth near Tiffany, N. Mex. A drainage channel should be constructed through this area to convey these drain flows to our conveyance channel and prevent the present high water losses.

Escondido area

Several hundred acres of low-lying ground on the east side of the river in this area should be protected by a levee and drain to eliminate the present high-water table caused by overflow and seepage from the river. This area is now mostly grassland with scattered large cottonwoods but it is rapidly being infested by salt cedars. The proposed construction would produce important water savings.

La Joya area

About 2,000 acres of low-lying ground west of the Santa Fe Railroad near La Joya are subject to a high groundwater table caused principally by seepage from the river. Part of the area is infested with salt cedars and much of it is covered by open water. Obviously, the water losses are high. To correct this condition, we proposed to construct an intercepting drain along the west side of the railroad embankment through this area. The estimated cost of the work which could be done to salvage water in the six areas is as follows:

San Antonio area	$200,000
Fort Craig area	68,000
Narrows area	40,000
Tiffany area	45,000
Escondido area	26,000
La Joya area	48,000
Total	427,000

Studies of other channel areas

The aerial photographs disclose numerous other areas where it is believed emergency water savings can be economically justified. Also the authorized overall channelization program through the entire project above the Bosque Del Apache Refuge upon completion will effect further important water savings. This portion of the authorized channel work is estimated to cost $6,531,000. To survey these possible emergency areas and to begin surveys for the main channel, $35,000 is requested.

Mr. JENSEN. Are there areas within the farmed lands of the Middle Rio Grande Conservancy District which are seeped and are consuming water which might be salvaged? Could you indicate to us on a map the extent of the high-water table areas within the irrigated portion and how the drainage system works would fit into the works already accomplished on the channel and give us an idea as to the quantity of water which might be recovered?

Mr. LINEWEAVER. Additional water could be salvaged by clearing and cleaning existing drains, constructing additional interior drains, improving existing drain outlets, and interconnecting the riverside drain system.

The water to be salvaged by rehabilitation and extension of the district's drainage system will be roughly 30,000 acre-feet annually. The construction program will require 2 years to complete. The breakdown of this figure follows:

(*a*) There will be 2,600 acres of clearing of heavy brush and trees along the drains. This vegetation now consumes appreciable amounts of water. This clearing will salvage annually 5,000 acre-feet.

(*b*) By connecting up certain riverside drains, return flows during the summer months will be kept out of 32 miles of a meandering and wide sandy river channel which is dry most of these months except for the drain flows. This will salvage about 7,000 acre-feet annually.

(*c*) There are about 30,000 acres in the project with a water table 0–4 feet. The new drains and rehabilitation of existing drains will lower this water level to 5 feet which will result in water salvage of about 18,000 acre-feet annually.

In addition to the water salvage outlined above, rehabilitation of the drainage system will protect present lands from high water table and increase crop yields on lands provided with new drains.

Mr. JENSEN. How would the water be conveyed from the drain systems in the farmed areas down to other users without excessive losses in the river channel?

Mr. LINEWEAVER. Many of the existing riverside drains serve a dual purpose. These drains parallel the river and intercept seepage from the river. They also drain adjoining lands and provide an outlet for the interior drains. Some of the riverside drains are also used to convey low river flows for irrigation because experience has proved that much of the low flows are lost if they are permitted to flow down the sandy river channel.

While the conveyance of low river flows through the drains is desirable from the standpoint of water salvage, part of the silt in the water deposits in the drain channels and creates a cleaning problem. In recent years, the conservancy district has been unable to keep up with this work. This has resulted in a marked reduction of efficiency of the drains. Also, the drain banks are infested with weeds and brush which hang into the water and aggravate the silting problem.

Several thousand acres of low-lying land near the river and other lands within the project totaling in all about 34,000 acres have developed high water table because of the inadequacy of the existing drainage system. Since much of this land has become unsuitable for agriculture, it is not cultivated and has become infested with heavy growths of cottonwoods, salt cedar, willows, and other useless plants which use water rapidly. This condition removes agricultural lands from production and increases water loss through accelerated evaporation and transpiration losses can be materially reduced by the construction of additional interior drains.

In many instances, water in the clogged riverside drains backs up to such an extent that the interior drain outlets are impaired. Removal of the obstructions will result in much greater efficiency for the interior drains and will effectively lower the ground water table. This, of course, improves agricultural lands and produces additional water salvage.

We have observed that much of the return flow from the drains disappears in the river bed during periods of low flow which normally occur during July, August, and September. These months are also a time of high irrigation demand. Measurements of the flow through the riverside drain outlets indicate that about 25,000 acre-feet per month return to the river channel during the summer months. In most cases these flows disappear into the river sands or are evaporated before they can be rediverted. It is reasonable to assume that most of these flows are lost for irrigation purposes.

Much of this loss would be prevented by constructing channels to interconnect existing riverside drains so that drain flows are not returned to the dry river channel.

Mr. JENSEN. What is your minimum program to carry out the optimum of water salvage in the valley.

Mr. LINEWEAVER. The minimum program is the completion of the Middle Rio Grande project plan as authorized.

It is very doubtful if the optimum degree of water salvage in the valley can be reached without the completion of the Middle Rio Grande project plan as authorized. Each of the component parts of the authorized project tie together to give the maximum degree of salvage that appears to be possible under the local conditions.

Mr. JENSEN. What part of the authorized project could you carry out efficiently during the 1954 fiscal year which would result in a good water-salvage program?

Mr. LINEWEAVER. The best orderly and efficient program considering the manpower and facilities we have available would be a program that would combine drainage and channel works. The summary of construction items and costs

of a well-balanced program would be as follows:

San Antonio area	$200,000
Fort Craig area	68,000
Narrows area	40,000
Tiffany area	45,000
Escondido area	26,000
La Joya area	48,000
Surveys, etc	35,000
Subtotal	462,000
Drainage rehabilitation	1,500,000
Total	1,962,000
Funds available [1]	200,000
Appropriation required	1,762,000

[1] Approval of expenditure required.

The facilities now constructed and those which could be constructed need to be maintained. The estimated annual operation and maintenance cost for the emergency channel work would be as follows:

San Marcial area	$130,000
Bernardo area	20,000
Other reaches listed	40,000
Total	190,000

The costs of operation and maintenance of the drainage system could be taken care of by the Middle Rio Grande Conservancy District.

Mr. JENSEN. Is the program which you propose self-containing, or does it require additional appropriations for fiscal year 1955?

Mr. LINEWEAVER. The program proposed for fiscal year 1954 does not require additional commitments for fiscal year 1955 to accomplish the water salvage outlined. The measures would be self-contained.

Mr. JENSEN. Would you give us an estimate of the potential water salvaged and the dollar value to the farmers or other users in the valley of this water.

Mr. LINEWEAVER. The potential salvage of water by completion of the channelization-work outlines would be about 8,000 to 10,000-acre feet and the drainage program would salvage roughly 30,000 acre-feet of water. By using an estimated value of $35 per acre-foot the value would be $1,400,000 each year.

OPERATION AND MAINTENANCE OF POWER FACILITIES

Mr. JENSEN. There is $1,197,594 for operation and maintenance of this project. Will you make a statement on that?

Mr. MCPHAIL. Yes, sir.

A general description of the Rio Grande project is contained in the construction statement for this project previously submitted to this committee.

Of the total funds being requested in fiscal year 1954 for the normal operation and maintenance of this project, $1,109,054 is being requested for the power facilities and that portion of the multipurpose facilities which is charged to power. Of this amount, $811,100 is for purchase of energy necessary to supplement the production of energy at the Elephant Butte power plant which is anticipated to continue to be low due to severe water shortages.

The electrical features of this project are comprised of the Elephant Butte power plant with an installed generating capacity of 24,300 kilowatts, 499 miles of transmission lines, and 14 substations.

The allotment requested for fiscal year 1954 is $13,214 greater than that for fiscal year 1953 due to an increase in the replacement and im-

provement items that are required for continual and safe operation of the project.

PERSONNEL

Mr. BUDGE. Mr. Chairman, I think we should note that on this operation and maintenanace item the total personnel on this project and their expenses must be paid by the people on the project. They have 446 permanent employees there. Now, there are only 70 who are paid by direct appropriations, but, nevertheless, the Bureau of Reclamation apparently has 446 employees on that project which somebody has to pay.

Mr. JENSEN. Yes. You are talking about the Power Division?

Mr. LINEWEAVER. No; that is another project.

Mr. JENSEN. That is another project?

Mr. LINEWEAVER. Yes, sir.

Let me make this clear right here, that in addition to the power system which Mr. McPhail mentions there we operate the Rio Grande Irrigation project in New Mexico and Texas.

We have tried for years, Mr. Chairman, to get the two districts, the El Paso Irrigation District in Texas and the Elephant Butte District on the New Mexico side to get together and take over the operation of this project. However, it is an interstate proposition. Because of differences in State laws the two districts have never gotten together.

So, therefore, we operate the irrigation systems under funds advanced by the water users, and I may say, Mr. Budge, that I have been on the project several times and conferred with the irrigation district managers in both States, and I know that they carefully scrutinize the irrigation budgets.

Mr. BUDGE. How many acres are involved in this?

Mr. LINEWEAVER. About 150,000 acres of irrigated land in the two States. The largest part of it is in New Mexico.

Mr. BUDGE. Now, I can show you comparable projects that are not Bureau of Reclamation projects that are administered with one-twentieth of that personnel.

Mr. LINEWEAVER. There is a difference in the climatic conditions in Idaho and Texas or New Mexico. They have longer irrigation seasons in this area than they do up in Idaho.

Mr. BUDGE. That would not affect the number of permanent positions, would it?

Mr. LINEWEAVER. Yes, sir; there would be considerable difference there, because it has a great deal to do with it. I realize that when you talk about the water users on the Rio Grande project paying something along $800,000 or $1 million a year for operation and maintenance that they are bound to scrutinize the budget, and our project manager there is constantly being approached by the water users to hold down his expenses. We think it is a very economically operated project now considering the various complexities of the irrigation system, the extent of it, and the difficulties that they have.

Mr. JENSEN. We have these personnel problems on almost every project in every agency of Government. I note here in 1952 you had 327; in 1953 you had 433, and in 1954 you propose 446 employees so it is gradually creeping up, and that is true of almost every agency of Government.

Now, when we finally reach the personnel program for 1954 all of those personnel matters will be considered fully, and I know this committee will do something about them.

IRRIGATION OPERATION AND MAINTENANCE

Mr. LINEWEAVER. Mr. Chairman, I would like to put a brief statement on the irrigation operation and maintenance in the record.

Mr. JENSEN. All right.

Mr. LINEWEAVER. And I want to call your attention to the fact that in the 1953 appropriation there was an amendment written in the Senate, that says that nonreimbursable appropriations are provided for flood control and international river-control operations.

The Rio Grande project is one of the oldest in the Bureau of Reclamation, having been approved by the Secretary of the Interior on December 2, 1905. The Irrigation Division, with an area of 160,000 acres, is fully developed and the expenses thereof are those incident to normal operation and maintenance, with some funds being expended on improvement of temporary structures and an occasional extension of canals, laterals, or drains. There are 6 diversion dams or main canal headings, 617 miles of diversion and distribution canals, and 470 miles of drainage ditches, with approximately 10,000 appurtenant structures.

The operation and maintenance expenses of the Irrigation Division are financed through funds advanced by the water users, there being two organizations, the Elephant Butte Irrigation District comprising all lands within the State of New Mexico, and the El Paso County Water Improvement District No. 1, those lands lying within the State of Texas. In addition, the project is required by international treaty to furnish 60,000 acre-feet annually to the Juarez Valley, Republic of Mexico, and has a Warren Act contract covering excess and waste waters with the Hudspeth County Reclamation and Conservation District, Hudspeth County, Tex., which has an irrigable area of 19,000 acres.

Two storage reservoirs of the project are operated by the Power Division with appropriated funds; the irrigation portion of the cost of the multipurpose operations being repaid by a service charge of 10 cents per acre-foot to the irrigation water users. Beginning in fiscal year 1954, nonreimbursable appropriations are being requested for flood control and international river-control operations, in accordance with determinations made of multipurpose costs applicable to those features in the amounts of $13,980 and $11,650, respectively.

MIDDLE RIO GRANDE PROJECT, NEW MEXICO

Mr. LINEWEAVER. Since you mentioned the Middle Rio Grande project we will have a statement in there in response to your questions. We have an item in here for $108,000 for the maintenance of channelization that was done under this emergency appropriation.

Mr. JENSEN. You will insert that in the record?

Mr. LINEWEAVER. Yes, sir; I will insert that in the record.

Mr. JENSEN. All right; without objection, it may be included in the record.

(The matter referred to follows:)

OPERATION AND MAINTENANCE

Summarized financial data

Allotment, fiscal year 1954	$108,000
Total obligations, 1954	108,000

JUSTIFICATION OF ESTIMATE

Location

The project is located in the Middle Rio Grande Valley in north-central New Mexico.

General conditions

The channel rectification portion of this project will provide an improved and degraded channel throughout the Espanola and Middle Valleys and below Elephant Butte Reservoir to the upper end of Caballo Reservoir. The first section of this rectification to be completed is a reach of approximately 30 miles in and above the headwaters of Elephant Butte Reservoir; the present estimate of operation and maintenance costs is for the operation and maintenance of a 22-mile stretch which will be completed during fiscal year 1953. Authority for this request for nonreimbursable funds to accomplish the operation and maintenance is contained in House Document No. 243 (81st Cong.), page 63, paragraph 219, last sentence, which states as follows: "Because it will be impossible to differentiate between new work and maintenance it is considered that maintenance of the channel should be a responsibility of the Federal Government."

Operation and maintenance of this 22-mile stretch will commence after the completion of construction work in 1953. It consists of repairs and maintenance of a channel with base width of approximately 32 feet, and 11 feet deep, a levee about 11 feet in height and about 81 feet in width at the base, and a 1,000-foot cleared floodway (with an area of 3,200 acres) paralleling the channel and levee. Major items include the removal of silt deposited by floods in the conveyance channel and floodway, necessary repairs to the levee and pertinent structures, and control or removal of vegetation in the channel, floodway, and on the levee. Already, experience shows phenomenal regrowth of vegetation which has occurred within 6 months after clearing of the floodway. Silt removal and repairs to the channel and levee will be accomplished with draglines, bulldozers, carryalls, and other necessary heavy earth-moving equipment. Control of vegetation, mainly salt cedars and willows, will be accomplished by spraying with herbicides, mowing, and other means. In addition, this work must include erosion control and protection of the levee and conveyance channel, stabilization of the conveyance channel, and a program of sedimentation investigations necessary for establishing operating criteria.

Work proposed, 1954

Irrigation facilities	Program, 1954	Increase (+) or decrease (−) from 1953
Carriage system: For initiating operation and maintenance of 30 miles of channel rectification works near the headwaters of Elephant Butte Reservoir in vicinity of San Marcial, N. Mex.	$108,000	+$108,000
Total obligations, irrigation	108,000	+108,000
Total obligations, all facilities	108,000	+108,000

KLAMATH PROJECT, CALIFORNIA-OREGON

Mr. JENSEN. Now, we turn to the Klamath project, California-Oregon, and we will insert in the record at this point pages 54, 55, 56, and 57 of the summary data sheets which have been furnished to the committee by the Bureau.

We will also insert at this point pages 401 to 404 and pages 107 to 111 of the construction and operation justifications, respectively.

(The matter referred to follows:)

CONSTRUCTION AND OPERATION AND MAINTENANCE

Construction

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$14,126,631	$604,428	$335,000
Unliquidated obligations	69,562	−69,562	
Total obligations	14,196,193	534,866	335,000

Operation and maintenance

	Actual 1952	Estimated, 1953	Estimated, 1954
Expenditures	$545,575	$585,592	$570,000
Unliquidated obligations	15,592	−15,592	
Total obligations	561,167	570,000	570,000
Less funds advanced by water users	231,777	235,400	235,400
Appropriation or estimate	[1] 329,600	334,600	334,600

[1] Appropriation amount of $210 in excess of needs.

HISTORY OF PROJECT DEVELOPMENT

Location

In central southern Oregon in Klamath County and central northern California in Modoc and Siskiyou Counties.

Purpose

Irrigation and flood control.

Authorization

By a finding of feasibility of the Secretary of the Interior on May 15, 1905.

Initial date

Planning, 1903.
Advanced planning, 1906.
Construction, 1906.

Date of functional completion of construction: Fiscal year 1957, exclusive of irrigation of 34,470 acres scheduled after fiscal year 1959.

Fiscal year and amount of initial allotment of appropriations for construction: Fiscal year 1905, $1,000,000.[2]

COSTS

Original estimated cost	$4,400,000
Allocation of cost: Irrigation	4,400,000
Present estimated cost	18,806,222
Allocation of cost: Irrigation	18,806,222

REPAYMENT

Repayment of the $3,919,953 construction cost of the completed main division, Bonanza Springs division, Langell Valley division, supplemental services division, and pumping division is provided for in separate contracts with 13 irrigation districts and companies as well as contracts with over 150 individuals. Repayment periods of these contracts are for 40 years or less. About 65 percent of the cost of these divisions has already been repaid.

[2] Subsequently canceled. First construction allocation used was made available in fiscal year 1906.

The $14,166,757 estimated construction cost of works in connection with the Tule Lake division and Modoc unit tentatively is scheduled to be returned as follows: (1) 40-year repayment contract for $3,937,408 currently being negotiated with the Tule Lake Irrigation District; (2) $506,129 from repayment contracts with other districts and from water rentals; (3) accumulated project land lease and other revenues estimated to total $5,896,565 by June 30, 1953; and (4) future lease revenues totaling $3,826,655.

Lower Klamath Lake division construction costs tentatively are scheduled for repayment from future land-lease revenues, or will be paid by the water users in the event it is later determined to develop this area for irrigation.

Repayment of costs allocated to irrigation

Water users	$8,363,490
Accumulated lease revenues	5,896,565
Future lease revenues	4,546,167
Total	18,806,222

Repayment costs per acre

Federal investment, per acre	$77.00
From irrigators	34.00
From lease revenues	43.00
Annual water-user charges:	
Construction	[1] 2.15
Operation and maintenance	4.50
Total	[1] 6.65

[1] Charges shown are those proposed for Tule Lake Irrigation District.

Gross crop income per acre resulting from project irrigation, $137.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full	84,512	84,512	84,512	90,372
Supplemental	124,644	124,644	125,346	153,956
Total	209,156	209,156	209,858	244,328

Personnel: Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Irrigation:			
Actual June 30, 1952	104 (62)	37 (22)	
1953	99 (59)	48 (27)	
1954	101 (61)	57 (36)	
Joint facilities:			
Actual June 30, 1952	2 (1)		
1953	2 (1)		
1954	2 (1)		
Denver office:			
Actual June 30, 1952			(0.1)
1953			
1954			
Regional CPA services:			
Actual June 30, 1952			(3.0)
1953			(3.0)
1954			(3.0)
Total:			
Actual June 30, 1952	106 (63)	37 (22)	(3.1)
1953	101 (60)	48 (27)	(3.0)
1954	103 (62)	57 (36)	(3.0)

NOTE.—Figures in parentheses indicate number of personnel financed from direct appropriations.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$18,806,222
Total obligations to June 30, 1952		14,196,193
Allotment, fiscal year 1953	$237,000	
Prior year balance available	297,866	
Total obligations, fiscal year 1953		534,866
Allotment, fiscal year 1954		335,000
Total obligations, fiscal year 1954		335,000
Balance to complete		3,740,163

JUSTIFICATION OF ESTIMATE

Authorization

The Klamath project was authorized by a finding of feasibility of the Secretary of the Interior on May 15, 1905.

Location

The project is located in central southern Oregon in Klamath County and central northern California in Modoc and Siskiyou Counties.

Description

The project utilizes the flow of Klamath River for the irrigation of the main division. The Langell Valley and Tule Lake divisions receive their supply from Lost River and Miller Creek, as retained and delivered by Clear Lake Dam and Gerber Dam, the Tule Lake Division supply being supplemented by return flow and diversion from Klamath River. Irrigation is generally by gravity except in the lower Tule Lake division where return flow is pumped to irrigate the Coppock Bay area and lease areas. Gathering of return flow takes place in the Tule Lake sump, from which excesses are pumped to lower Klamath Lake and ultimately back to Klamath River. Full irrigation supplies are available to 84,512 acres of main and Tule Lake division lands. Supplemental water is supplied through Warren Act and other special contracts to 124,644 acres of private lands and Government lands leased for operation. Control of floods on Lost River is an important part of the project works since this river normally flows into the bed of Tule Lake which, except for 13,200 acres of restricted sump, is now occupied by farms. This control is performed by retention in reservoirs, construction of channels to carry, divert, and return the flow, open sumps to store and evaporate the water, and pumps to remove it. Except for the raising of Clear Lake Dam to retain an additional 100,000 acre-feet of flood flow, all flood works are complete or will be completed before the end of fiscal year 1953.

Repayment

Construction work thus far performed in the various districts has been contracted for repayment except in the Tule Lake division where the land was essentially all public, and a district has been formed and a repayment contract is now being negotiated. Special legislative provisions cover the lease lands of the Tule Lake division, called the Modoc unit, under which the proportionate share of the construction and flood-control costs are to be paid by net lease revenue from the leasing of public lands.

Status

Construction started in 1906. Recent construction has involved further flood protection for lands irrigated, and the irrigation on a more concentrated basis of certain lease lands. A definite plan report has been written on the Klamath Straits unit, a tract of almost 6,000 acres which, when approved and developed, will bring this amount of land under homestead entry as part of the project.

As of the end of fiscal year 1953, the contracts for the improvement of lower Lost River Channel and main dikes, and the work on pumping plants 1, 2, 3, 4, and 5, the contract for channelization and other improvement on Lost River, upper Langell Valley, and the contract for the laterals and drains, N-Canal area, second extension, will all be completed. Also completed will be the contract for the construction of pumping plants R and S. During the year the design data will have been completed and specifications issued for the raising of Clear Lake Dam in order to increase the flood storage in Clear Lake Reservoir by 100,000 acre-feet.

Work proposed, fiscal year 1954

A construction contract will be awarded for the raising of Clear Lake Dam, and work thereon will get under way. Necessary studies and reports for Klamath Straits unit settlement will be completed. It is anticipated that the Klamath project studies under pumping division will be completed, and appropriate action recommended. Studies looking toward the completion of a definite plan report on the Sheepy Lake area will be carried on and the report completed in fiscal year 1954.

Justification

The lands which have been entered in the Tule Lake division since 1947 have not had full flood protection. The construction of all necessary flood-control channels will have been completed, leaving only the final step, raising of Clear Lake Dam to complete this flood protection work. The development and settlement of Klamath Straits unit and the development of the Sheepy Lake area are considered as parts of the basic purpose of the project and the Bureau.

The total estimated cost of the Klamath project has been increased from $18,512,614 to $18,806,222 (anticipated total obligations $18,806,222). This cost adjustment is attributable to increased cost occuring in the Modoc unit area from increased construction costs for completion of pumping plants R and S, unanticipated work in the completion of second extension laterals in the N-Canal area and additional costs occasioned by delayed completion of negotiations for clearance of titles in the lower Lost River Channel area.

Schedule of construction program, fiscal years 1953 and 1954, Klamath project, California-Oregon

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Main division, completed work	$2,247,895	$2,247,895			
Bonanza Springs division, completed work	38,350	38,350			
Langell Valley division, completed work	926,243	926,243			
Supplemental services division, completed work	127,649	127,649			
Pumping division, completed work	514,816	514,816			
Laterals	65,000	40,283	$15,000	$9,717	
Lower Klamath Lake division, completed work	290,512	290,512			
Laterals	351,000	20,280	15,000		$315,720
Farm units	78,000				78,000
Tule Lake division, completed work	3,086,544	3,086,544			
Farm units	25,000	13,667	11,333		
Modoc unit, completed work	5,223,195	5,223,195			
Reservoirs and dams	3,918,000	166,114	34,000	312,500	3,405,386
Pumping plants	416,000	154,515	208,547		52,938
Laterals	410,718	259,278	29,408	12,032	110,000
Channels, levees, and floodworks	1,087,300	780,018	307,282		
Total cost	18,806,222	13,889,359	620,570	334,249	3,962,044
Construction facilities		109,705	−18,000	−10,000	−81,705
Stores		55,375	−12,142	−10,000	−33,233
Transfers, credits, and other expenditures		72,192	14,000	20,751	−106,943
Total expenditures	18,806,222	14,126,631	604,428	335,000	3,740,163
Unliquidated obligations		69,562	−69,562		
Total obligations	18,806,222	14,196,193	534,866	335,000	3,740,163
Method of financing:					
Allotment, fiscal year 1953			237,000		
Prior year balance available			297,866		
Allotments required				335,000	3,740,000

Operation and Maintenance

Summarized financial data

Total obligations, fiscal year 1952		**$561,167**
Fiscal year 1953:		
Allotment	**$334,600**	
Funds advanced by water users	**235,400**	
Total obligations, 1953		**570,000**

Summarized financial data—Continued

Fiscal year 1954:		
Allotment	$334,600	
Funds advanced by water users	235,400	
Total obligations, 1954		$570,000

JUSTIFICATION OF ESTIMATE

Location

The irrigable lands of the Klamath project are located in Klamath County in south central Oregon and Siskiyou and Modoc Counties in north central California. The project works supply irrigation water to the project lands as a whole and provide flood control on Lost River. The project water supply comes from three storage reservoirs, Clear Lake, Gerber, and upper Klamath Lake, which have a total capacity of 1,056,500 acre-feet. The total crop values for the project lands amounted to $26,110,930 for the 1951 growing season, about $8,700,000 more than in 1950.

General conditions

The Secretary of the Interior authorized the Klamath project on May 15, 1905. Constructoin work started in 1906, and water was first delivered to project lands on the main division May 16, 1907. In succeeding years the irrigable area of land has been constantly increasing until now the lands which can be served from the project facilities approximate 210,000 acres. Full irrigation supplies are available to approximately 85,000 acres of project lands, with the balance supplied under the Warren Act and other special contracts. The Bureau of Reclamation is the operating agency for the project lands. The Klamath Irrigation District is the contracting agency for the collection of construction and operation and maintenance charges for the project lands of the main division, located entirely in the State of Oregon, and that part of the Tule Lake division lying in the State of Oregon. Project lands of the Tule Lake division within the State of California are currently on a water-rental basis. An irrigation district has been organized, however, and is now negotiating with the Bureau on a contract for repayment of construction costs. Warren Act contractors, special contracts, and water-rental areas make direct payment to the Bureau.

The total value of the repayment contract with Klamath Irrigation District amounts to $2,254,243 of which $1,687,327 has matured and payment received leaving a balance of $566,916 unmatured. All other existing contracts have a repayment value of $1,989,338 of which $750,453 has matured with an unpaid account of $699, leaving a balance unmatured amounting to $1,238,885.

Work proposed, 1954

	Program 1954	Increase (+) or decrease (−) from 1953
MULTIPURPOSE FACILITIES		
Storage system: For continued operation of Clear Lake, Gerber, and Upper Klamath Lake reservoirs and dams	$13,020	+$200
Total obligations, multipurpose	13,020	+200
IRRIGATION FACILITIES		
Distribution system: Continued operation of the large distribution system, with accent on repair and/or replacement of worn structures, increased weed and pest control. Increased maintenance of ditch bank roads will result in increased fund requirement	369,510	+30,113
Drainage system: Operation and maintenance to include continuation of normal and essential work. Increase is due to cleaning of drains and/or repairs and replacements to structures	158,970	+4,037
Replacement and improvements: For rehabilitation of Tule Lake sump dike, purchase of replacement vehicles and purchase of shop equipment. Decrease is attributable to approaching completion of work on the Tule Lake sump dike	28,500	−34,350
Total obligations, irrigation	556,980	−200
Total obligations, all facilities	570,000	

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
MULTIPURPOSE FACILITIES			
Operation and maintenance: Storage system	$16,552	$12,820	$13,020
Total obligations, multipurpose facilities	16,552	12,820	13,020
IRRIGATION FACILITIES			
Operation and maintenance:			
Distribution system	349,190	339,397	369,510
Drainage system	162,418	154,933	158,970
Replacements and improvements	33,007	62,850	28,500
Total obligations, irrigation facilities	544,615	557,180	556,980
Total obligations, all facilities	561,167	570,000	570,000
Allocation:			
Irrigation	555,245	565,070	565,015
Flood control	5,922	4,930	4,985
Total obligations	561,167	570,000	570,000
Method of financing:			
Allotment	329,600	334,600	
Unobligated balance	−210		
Allotment required			334,600
Funds advanced by water users	231,777	235,400	235,400

Project statistics

Feature or item	Unit	Actual, fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
Irrigation system:				
Irrigable area:				
Full irrigation	Acres	84,512	84,512	84,512
Supplemental	Acres[1]	124,644	124,644	125,346
Total	Acres[1]	209,156	209,156	209,858
Cultivated area (total)	Acres	190,175	192,500	192,500
Gross crop value	Dollars	$26,100,000	$20,000,000	$20,000,000
Average gross crop value per cultivated acre	do	$137	$104	$104
Storage dams and reservoirs	Number	3	3	3
Diversion dams	do	4	4	4
Pumping plants	do	26	28	28
Canals	Miles	120	120	120
Laterals	do	474	477	477
Drains	do	641	644	644
Operating roads	do	341	344	344

[1] Includes supplemental water being furnished leased lands.

Mr. JENSEN. You are asking for $335,000 for construction in the 1954 budget, and you are also asking for $334,600 for operation and maintenance. Please tell us about those two items.

Mr. LINEWEAVER. The construction item, Mr. Chairman, provides for the resumption of the settlement program on public lands in the Klamath Straits area and approximately 2,500 acres in the League of Nations tract. These funds would be necessary for the purpose of installing laterals, and the completion of certain other work so that we can have these lands available for settlement.

Mr. JENSEN. This $335,000 now, we understand, will complete the job.

Mr. LINEWEAVER. No, sir.
Mr. JENSEN. It will not?
Mr. LINEWEAVER. No, sir.
Mr. JENSEN. How much is it going to take?
Mr. LINEWEAVER. A total of $1,854,280 will be required after fiscal year 1954 to complete the current construction program for the Klamath project. This amount is exclusive of $3,073,883 for future development work on the project, which includes the construction of Boundary Dam.

The Klamath project is one of our oldest and most successful irrigation developments, serving some 244,000 acres of land in the rich volcanic soil region of northern California and southern Oregon. This land lies in a basin and has been reclaimed from an old lakebed by progressively diking off certain areas and diverting fresh water into this sump for irrigation purposes.

The control of floodwaters, which rise directly to the east of the project, is necessary for the protection of the lands along the Lost River which flows into the Tule Lake area. Much of the protective measures along the river have been completed, or are being completed, such as the Lost River channel improvement.

Because of the need of homes for veterans and waterfowl conservation, the Secretary of the Interior on January 9, 1953, directed the Bureau of Reclamation to take appropriate steps to homestead as soon as practicable: (a) All the lands in the Klamath Straits unit except approximately 1,770 acres in the half sections bordering the Oregon-California State line and (b) approximately 2,500 acres in the League of Nations tract. To facilitate accomplishment of the objectives of the order, funds requested for fiscal year 1954 will be used to initiate construction on irrigation facilities on the Klamath Straits unit. These include a pumping plant, laterals and drains for the irrigation of about 4,000 acres. Also, a contract will be awarded for the installation and rebuilding of laterals, drains, and dikes of the League of Nations development in the N-canal area of the Modoc unit-Tule Lake division.

LEASING PROBLEMS

Mr. LINEWEAVER. I would like to call your attention to one factor. In a letter of January 16, 1953, to Chairman Taber of the House Appropriations Committee, former Secretary Chapman advised that over the period from 1945 to 1953 a total of $6,786,000 was appropriated for the Klamath project, and it was justified largely for irrigation with the approval of the Bureau and the Department for advancing irrigation and veteran settlement on the Klamath project.

By an order that the Secretary issued on January 9, 1953, part of the lands for which this money was appropriated were to be turned over to the Fish and Wildlife Service for waterfowl-conservation purposes.

I insisted to the Secretary that I should be permitted to state to the committee the facts, both with respect to his order and the reasons therefore, as well as the letter from him to Mr. Taber advising of the fact that $1,800,000 of this $6,786,000 is applicable to lands which are

covered by this division of responsibility between the Fish and Wildlife Service and the Bureau of Reclamation.

Now, this matter of Secretary Chapman's order has been brought to the attention of Secretary McKay by representatives of the area, principally veterans' organizations, who have protested against the diversion or transfer of any of this 13,000 acres involved to the Fish and Wildlife Service.

The Secretary has indicated that he proposes to review Secretary Chapman's action by the time this order would become effective as far as administration by the Fish and Wildlife Service is concerned, which is December 31, next. So it is assumed that the present Secretary will have acted before that date one way or another.

I may say that this $335,000 will be applied to the preparation for irrigation of lands in the Klamath Straits area and in the League of Nations tract, and the funds would not be applied to any of the area that is to be transferred to the Fish and Wildlife Service for administration under Secretary Chapman's order.

I will submit a full explanation for the record.

(The matter referred to follows.)

KLAMATH PROJECT—SETTLEMENT AND LEASING PROBLEMS

Within the boundaries of the Klamath project there are about 59,000 acres of land and water area that are included within the Tule Lake and Lower Klamath Lake Wildlife Refuges which were established by Executive orders containing stipulations to the effect that use of the areas for refuge purposes was secondary to their use for reclamation purposes. Included in the total refuge areas are about 20,000 acres of the finest public lands for irrigation purposes in the West.

Unfortunately, opposed to the demand for opening of those lands for veterans' homesteading, there is a competing demand for retention of all of the lands in public ownership for the benefit of waterfowl of the Pacific flyway.

On January 9, 1953, the Secretary of the Interior issued directives to the Bureau of Reclamation and the Fish and Wildlife Service instructing Reclamation to lease all of the lands in question during 1953, to prepare for homesteading approximately 4,200 acres in the Klamath Straits unit in Oregon and approximately 2,500 acres in the League of Nations tract in California as soon as practicable and, on January 1, 1954, to turn over all of the remaining leased lands to the Service for administration by that agency. The chairmen of the House and Senate Appropriations Committees were advised of this action by letters dated January 16, 1953 (copy attached).

During 1952, it was found necessary to cancel a number of leases in the Tule Lake area of the Klamath project because of violations of their lease provisions by certain of the lessees. This has now been straightened out and the Bureau is proceeding to issue new leases for the 1953 season, in accordance with the Secretary's directive of January 9. With construction funds requested for fiscal year 1954, the Bureau will construct or rehabilitate facilities for opening the League of Nations tract and the Klamath Straits unit for homesteading before the start of the 1955 crop season.

JANUARY 16, 1953.

Hon. JOHN TABER,
Chairman, House Appropriations Committee,
House of Representatives, Washington 25, D. C.

MY DEAR MR. TABER: During the past several years a serious problem has arisen within the Department of the Interior with reference to the future development of irrigable lands of the Klamath irrigation project in California and Oregon, since these lands are also included within the exterior boundaries of the Tule Lake and Lower Klamath Lake Wildlife Refuges. There have been competing demands for the opening of a portion of these public lands for homesteading under reclamation law and for retention of all of the lands in public ownership for the benefit of waterfowl of the Pacific flyway.

After thorough investigation and full consideration of all of the factors involved, I have directed adoption of a compromise position as outlined in the enclosed press release dated January 9.

I am calling this matter to your attention at this time because it constitutes, to a certain extent at least, a change in the program which has been presented to you by the Bureau of Reclamation each year since the end of World War II, for the development of which the Congress has appropriated funds in excess of $6,786,000 during fiscal years 1945 to 1953, inclusive. About $1,800,000 of these total appropriated funds are allocable to the areas that were under consideration in reaching the decision referred to herein.

Representatives of the Department of the Interior will be prepared to respond to any questions you may have concerning this decision, either now or during the forthcoming appropriation hearings. An identical letter is being addressed to Senator Bridges, chairman of the Senate Appropriations Committee, with copies to Senator Cordon, and to Representative Jensen.

Sincerely yours,

OSCAR L. CHAPMAN,
Secretary of the Interior.

DEPARTMENT OF THE INTERIOR INFORMATION SERVICE

KLAMATH SETTLEMENT ANNOUNCED

Secretary of the Interior Oscar L. Chapman today announced settlement of the land jurisdiction problem in the area which lies both in the Klamath and Tule Lake Wildlife Refuge and the Klamath irrigation project in Oregon and California.

This problem was created by the need to retain the irrigated lands of the refuges in public ownership for the benefit of wildlife conservation. The area is one of the key waterfowl concentration points in the Pacific flyway.

There have been competing demands for the opening of these public lands for homesteading under Reclamation law.

Secretary Chapman directed that 6,700 acres of the 59,000-acre area, a large part of which is water area will be opened for homesteading as soon as possible. The balance will remain in the wildlife refuges, not subject to homesteading. Twenty-five hundred acres of the land to be homesteaded lies in California, near the town of Tule Lake. The remaining acreage is in Oregon, north of the State boundary.

A copy of Secretary Chapman's directive to the Bureau of Reclamation and the Fish and Wildlife Service follows:

"I have considered carefully the proposals made by your respective agencies relative to the disposition of lands which lie both in the Klamath irrigation project and the Tule Lake and Lower Klamath Wildlife Refuges. The basic issue here is whether any or all of these lands should be opened to entry under the reclamation homestead acts or should be retained in the refuges and kept under cultivation in the present leasing system.

"The lands involved are among the finest public lands for agricultural purposes under irrigation in the West. They could provide farms and homes for veterans under the homesteading program of the Bureau of Reclamation.

"On the other hand, the area is one of the key waterfowl concentration points on the North American Continent. It is indispensable for the maintenance of the Pacific flyway.

"More irrigation development in the area is needed to provide both for increased waterfowl conservation and for more homesteading opportunities. Investigations are now under way by the department of water resources in the upper and lower Klamath River Basins. It is hoped that these investigations will result in the development of additional irrigated lands so that waterfowl conservation areas and homesteading opportunities can both be augmented.

"Meanwhile, the immediate problem is to be resolved by the following directives:

"The Fish and Wildlife Service shall:

"1. Take steps as appropriate to take over by January 1, 1954, the administration of those lands in the Tule Lake and Lower Klamath Refuges which are now administered by the Bureau of Reclamation and which are not to be opened for homesteading. Any leases of these lands shall be on a cash basis with

careful attention to the avoidance of land monopoly or corporate farming. Such leases should be on a basis which will realize maximum revenues consistent with conservation of wildlife and the public land.

"2. Remit all revenues derived from the leasing of these lands for deposit in the reclamation fund to be credited against the project construction cost pursuant to provisions of law.

"3. Be responsible directly, or, by the terms of its leases, through the lessees for remittance to the project superintendent of the Bureau of Reclamation annual opertaion and maintenance or water rental payments in the amounts and at the times required by public notice.

"4. As soon as possible provide increased funds and more personnel for cooperation with the Bureau of Reclamation in the investigations now under way by the Bureau of Reclamation of the upper and lower Klamath River Basins. One of the principal objectives of these investigations will be to discover and develop irrigated lands suitable for the production of grain for wildfowl feed.

"The Bureau of Reclamation shall:

"1. Take appropriate steps to homestead as soon as practicable the following areas:

"(*a*) All of the lands in the Klamath Straits unit except approximately 1,770 acres in the half-sections bordering the Oregon-California State line, and

"(*b*) Approximately 2,500 acres in the League of Nations tract.

"This will make a total available for immediate homesteading of approximately 6,700 acres. All other lands in the Tule Lake and Lower Klamath Refuges are to be utilized for the conservation of the wildlife resource, subject to the deposit of revenues as provided for in pargaraph 2 of the preceding section.

"2. Intensify the investigations now being made of the upper and lower Klamath River Basins and reorient these investigations wherever necessary so as to have as a primary objective the discovery and development of lands suitable for the production of wildlife feed under irrigation.

"3. Continue the leasing of all lands leased by the Bureau of Reclamation in the area in 1952 for a period ending on December 31, 1953, in a manner that will be consistent with homestead entry of the above-described 6,700 acres and also in a manner that will be consistent with the taking over by the Fish and Wildlife Service on January 1, 1954, on the leasing of the lands to remain in the refuges.

"4. As funds are available, proceed with the present plan of flood protection in the Tule Lake area, and such irrigation construction as may be necessary to serve the 6,700 acres to be homesteaded in the Klamath Straits and Tule Lake areas, and maintain and operate all irrigation, drainage, and flood-protective works in the entire area. Provide water service for the wildlife refuge lands on a cost basis for operation and maintenance or water rental comparable to that applicable to other project lands and in amounts, to the extent permitted by law, comparable to the amounts of water supplied other project lands.

"By copy of this memorandum, the Solicitor is requested to draft executive orders, in cooperation with the Bureau of Reclamation, the Fish and Wildlife Service and interested divisions of the Secretary's Office, modifying the boundaries of the Tule Lake and Lower Klamath Wildlife Refuges so as to exclude from them the lands to be homesteaded, as described above, and to include in the Lower Klamath Refuge approximately 225 acres of public land south of Sheepy Lake. These orders should be drafted so that the continued use of the refuges for wildlife purposes shall not be subordinated to use for reclamation homestead purposes.

"Previous instructions relative to the homesteading program on the Klamath project are rescinded.

"You are directed to submit for approval by the Secertary a new memorandum of agreement on management of Klamath lands to supersede the present one between your agencies approved in 1942. The new agreement should be consistent with the above directives and continue those administrative arrangements incorporated in the present agreement which are not in conflict with these directives.

"The Appropriations Committees of the Congress will be notified of these directives."

OPERATION AND MAINTENANCE

Mr. JENSEN. Do you have an operation and maintenance statement?

Mr. LINEWEAVER. Yes, sir; I have the operation and maintenance statement here.

The irrigable lands of the Klamath project are located in Klamath County in south central Oregon and in Siskiyou and Modoc Counties in north central California. The project water supply comes from 3 storage reservoirs, Clear Lake, Gerber, and upper Klamath Lake, which have a total capacity of 1,056,500 acre-feet. Land which can be served from the project facilities approximate 210,000 acres. Full irrigation supplies are available to approximately 85,000 acres of project lands, with the balance supplied under the Warren Act and other special contracts. The Bureau of Reclamation is the operating agency for the project lands. The Klamath Irrigation District is the contracting agency for the collection of construction and operation and maintenance charges for the project lands of the main division, located entirely in the State of Oregon, and that part of the Tule Lake division lying in the State of Oregon. Project lands of the Tule Lake division within the State of California are currently on a water-rental basis. An irrigation district has been organized, however, and is now negotiating with the Bureau on a contract for repayment of construction costs. Warren Act contractors, special contracts, and water-rental areas make direct payment to the Bureau.

For operation and maintenance of the entire project during fiscal year 1954, an appropriation of $334,600 is requested, which will be supplemented by funds advanced by the water users in the amount of $235,400. This financing will be identical with that for fiscal year 1953.

Mr. LINEWEAVER. I would like to add there, Mr. Chairman, that we are proceeding to expedite the negotiation of a repayment contract with the settlers on the Tule Lake division, but that those negotiations have been somewhat disturbed by the proposed transfer of public lands, which would have been within the proposed district to the Fish and Wildlife Service.

We are, however, urging that that matter not be permitted to delay the consummation of a repayment contract with the settlers who have come to that area. Some of them have been on there a good many years, and others have come under the settlement program that followed World War II.

CONSTRUCTION AND REHABILITATION

CENTRAL VALLEY PROJECT, CALIFORNIA

Mr. JENSEN. For a moment I want to turn back to the Central Valley project.

SACRAMENTO VALLEY CANALS

Congressman Clair Engle, of California, came to my office this forenoon on a matter which he considers of great interest to the people in the northern part of California, the Sacramento Valley canals.

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. And which there has been some discussion about in bygone years. He feels that there is great need for such canals, and has asked me to have the matter considered by the committee.

There is no money in the budget for such work?

Mr. LINEWEAVER. For construction, that is right.

Mr. JENSEN. For construction?

Mr. LINEWEAVER. Yes, sir, no estimate for construction.

Mr. JENSEN. You have made some investigations?

Mr. LINEWEAVER. Yes, sir, and there is money in there for advance planning.

Mr. MARKWELL. There is something over a half million dollars. I believe it is $631,000.

Mr. LINEWEAVER. Yes, that is right.

Mr. JENSEN. Has the planning advanced far enough to justify construction in the fiscal year 1954?

Mr. LINEWEAVER. Yes, sir, we could let a contract for a diversion dam and for some of the canals, in what we call the first phase of the Sacramento Canal division of the Central Valley project in 1954.

Considerable advance planning has been done heretofore, and there is $631,000 in the budget this year for the advance planning of the Sacramento canals.

Mr. JENSEN. Now, let me ask you this question: Do you have a considerable amount of unobligated and unexpended funds in the Central Valley irrigation funds which could be used for construction of these canals, or would it be necessary to earmark funds specifically for such construction?

Mr. LINEWEAVER. I would like to check my figures with the latest reports, Mr. Chairman, but our impression is that there will be a substantial carryover in the Central Valley appropriation for 1953 which would be available.

Mr. GOLZÉ. If I may comment, Mr. Chairman, the justifications for the Central Valley project, include $11,771,000 of unobligated carryover from the fiscal year 1953 which have been worked in to support program for 1954; $11,771,000 was available as of February 28.

Mr. JENSEN. My question is, Do you have authority at this time to use any of the Central Valley funds for the construction of canals on this project known as the Sacramento Valley canals?

Mr. LINEWEAVER. Yes, sir; the Sacramento Canal division was authorized by an act of Congress, September 26, 1950, but the law required a finding of feasibility previous to the expenditure of funds. That finding of feasibility has been made, and as the program is proper, we would be authorized to use any unobligated balance. It could be legally used.

Mr. JENSEN. The finding of feasibility was a finding by the Secretary?

Mr. LINEWEAVER. Yes, as required by the special law. This finding was not under the general law or Reclamation Project Act of 1939. The Sacramento Valley canals were authorized specifically by act of Congress in 1950.

Mr. JENSEN. But no construction money has been appropriated specifically for that project to date?

Mr. LINEWEAVER. That is right, sir. The authorization was by the act of September 26, 1950.

Mr. JENSEN. It would appear, then, that our hands are tied, so far as appropriating construction funds for that project out of already appropriated funds is concerned or in this 1954 appropriation. Would you say that?

Mr. LINEWEAVER. No; I would not say that the committee's hands are tied. The finding of feasibility that I referred to as required by

this act is not a finding of feasibility to authorize a project, as it was carried in the act of 1939 to which you referred yesterday in your discussion of the Solano project.

Mr. JENSEN. Yes. If the committee saw fit to appropriate funds, it could?

Mr. LINEWEAVER. There is not any legal bar to it, in our opinion, because a finding of feasibility has been made in accordance with this act.

Mr. JENSEN. If the committee saw fit to put into the report that $500,000 from funds herein appropriated or previously appropriated for the Central Valley project, it could be used for this purpose. Would that be proper?

Mr. LINEWEAVER. That would be in accordance with section 5 of this act of April 26, 1950, which says:

> There are hereby authorized to be appropriated such funds as may be necessary to construct the works authorized in section 2 of this act—

which are the Sacramento Valley canals—

> *Provided*, That no expenditure of funds shall be made for construction of this project until the Secretary of the Interior, with the approval of the President, has submitted to the Congress, with respect to such works a completed report and finding of feasibility under the provisions of the Federal Reclamation laws.

Mr. JENSEN. I have already asked you, I think, if your advance planning is far enough along so that construction could properly start on July 1 next?

Mr. LINEWEAVER. I understood your question to be, Could we begin construction within the fiscal year 1954?

Mr. JENSEN. Yes.

Mr. LINEWEAVER. My understanding is that the advance planning for the diversion dam and certain of the canal head work has advanced to the point where designs could be completed and bids advertised for within a few months.

Mr. JENSEN. The committee will take it under advisement.

PROVO RIVER PROJECT, UTAH

Mr. JENSEN. Now we turn to the Provo River project, Utah, and we will insert in the record at this point pages 58, 59, and 60 of the special data and summary sheets which have been furnished to the committee by the Bureau, and also pages 406–410 of the justifications.

(The matter referred to follows:)

CONSTRUCTION

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$29,362,600	$2,606,504	$404,749
Unliquidated obligations	293,504	−293,504	
Total obligations	29,656,104	2,313,000	404,749

HISTORY OF PROJECT DEVELOPMENT

Location

In north central Utah in Summit, Wasatch, Utah, and Salt Lake Counties.

Purpose

Irrigation, municipal water, and power.

Authorization

Act of December 5, 1924 (43 Stat. 701), by a finding of feasibility of the Secretary of the Interior on November 13, 1935, approved by the President, November 16, 1935.

Reauthorization

By a finding of feasibility of the Secretary of the Interior on October 21, 1938, approved by the President on October 24, 1938; and the act of March 29, 1948 (62 Stat. 92).

Initial date

Planning, 1922.
Advanced planning, 1936.
Construction, 1938.
Date of functional completion of construction, fiscal year 1956.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1934, $2,700,000.
All but $300,000 subsequently rescinded.
Actual construction started with funds allocated in fiscal year 1938.

COSTS

Original estimated cost	$9,974,000
Allocation of cost: Unallocated	9,974,000
Present estimated cost	33,393,290
Operation and maintenance during construction	58,909
Allocated cost	33,452,199
Allocation of cost:	
Irrigation	8,331,663
Power	990,000
Municipal water	24,130,536

REPAYMENT

Status of repayment contract negotiations. Repayment contracts have been executed with Provo River Water Users[1] Association and the Metropolitan Water District.

Amount to be repaid and repayment period

	Amount	Repayment period		Total
		Regular	Development	
Irrigation	$6,986,300	1954 to 2009	0 years	55 years.
Power	960,000	1956 to 1973	0 years	17 years.
Municipal	21,714,438	1951 to 2009	0 years	58 years.
Irrigation and municipal payable from power revenues	3,166,195	1951 to 2009	0 years	58 years.

Repayment of costs allocated to irrigation:	
Water users	$6,986,030
Power: Direct	1,345,633
Total	8,331,663
Repayment costs per acre:	
Federal investment per acre	147
From irrigators	123
From power revenue	24
Annual water user charges:	
Construction	2.15
O. and M	1.85
Total	4.00
Gross crop income per acre resulting from project irrigation	$116

(Actual for calendar year 1951—includes also use of nonproject water.)

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Through fiscal year 1953	Through fiscal year 1954	Ultimate
Irrigation (acres) Supplemental	46,609	48,609	50,609	56,609
Total	46,609	48,609	50,609	56,609
Power (kilowatts)				5,000
Average power rates (mills per kilowatt hour):				
Firm				5.5
Project use non-firm				2.0

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$33,160,853
Total obligations to June 30, 1952		29,656,104
Allotment, fiscal year 1953 (general investigations funds)	$3,000	
Allotment, fiscal year 1953 (construction funds)	2,270,000	
Prior year balance available	64,749	
Balance available in subsequent year	−24,749	
Total obligations, fiscal year 1953		2,313,000
Allotment, fiscal year 1954	$380,000	
Prior year balance available	24,749	
Total obligations, fiscal year 1954		404,749
Balance to complete		787,000

JUSTIFICATION OF ESTIMATE

Authorization

The Provo River project was authorized under the provisions of the act of December 5, 1924 (43 Stat. 701), by a finding of feasibility of the Secretary of the Interior on November 13, 1935, approved by the President November 16, 1935; a finding of feasibility of the Secretary of the Interior on October 21, 1938, approved by the President on October 24, 1938; and the act of March 29, 1948 (62 Stat. 92).

Location

The project is located in north central Utah in Summit, Wasatch, Utah, and Salt Lake counties. Project works extend from the Duchesne Tunnel—about 20 miles east of Kamas, Utah—southwesterly to Provo, Utah, and thence northwesterly to Salt Lake City, Utah.

Description

The project will conserve water resources of Weber, Provo, and Duchesne Rivers and will utilize the water for supplemental irrigation of 56,609 acres of

lands now inadequately served from existing sources, and in addition provide badly needed domestic and industrial water supplies for the metropolitan districts of Salt Lake City, Provo, Orem, Pleasant Grove, American Fork, and Lehi. Facilities of the project include the Deer Creek Dam on Provo River, the Weber-Provo diversion canal, the Duchesne tunnel and diversion dam, enlargement and betterment of the Provo River channel from Duchesne tunnel to Deer Creek Dam, Murdock diversion dam, Provo Reservoir canal including South Lateral of the Utah Lake Distributing Company Canal, and the Salt Lake Aqueduct, including the terminal reservoir. The power system includes the Deer Creek powerplant, Deer Creek substation, and about 3,000 feet of transmission line. Installed capacity will be 5,000 kilowatts. Included also will be 3 residences for operating personnel.

Repayment

Repayment of construction costs for project works is covered by repayment contracts as follows:

Deer Creek division.—The repayment contract No. IIr-874 dated June 27, 1936, between the Unitetd States and the Provo River Water Users' Association providing for the repayment of construction costs of the Deer Creek division was executed by both parties in 1936. Two supplemental contracts dated July 3, 1937, and December 20, 1946, respectively, also have been executed in amending the repayment contract. In addition to the above, Public Law No. 462, 80th Congress, 2d session, makes possible repayment of the construction costs which are in excess of the maximum liability under the above contracts by renting project water to the water users and crediting the funds thus received to the construction costs. Costs of the Deer Creek power plant and appurtenant facilities will be repaid from the sale of power, and in addition within a 50-year period will make available about $1,037,100 for repayment of costs of the Deer Creek division as provided in article 38 of the repayment contract mentioned above.

Aqueduct division.—Contract IIr–174 dated November 16, 1938, amended by supplemental repayment contract dated December 16, 1946, between the United States and the Metropolitan Water District provided for the repayment of construction cost of the Salt Lake aqueduct. In addition to the above, the act of March 29, 1948 (52 Stat. 92) makes possible the repayment of construction costs which are in excess of the maximum liability under the above contract by renting project water to the water users and crediting the funds thus received to the construction costs.

Status

Construction began July 16, 1938. As of June 30, 1952, the project was approximately 88 percent complete. Construction will continue during fiscal year 1953 on the Deer Creek division, on the Duchesne tunnel, and on the Provo River channel revision.

Work proposed, fiscal year 1954

The program for fiscal year 1954 includes completion of Provo River channel revision, preconstruction work on, and initiation of construction of the Deer Creek powerplant and appurtenant facilities.

Justification

The necessity for irrigation, domestic, and industrial water in this area which existed at the time of authorization of the project has become increasingly acute. Increases in wartime industry brought a large influx of people to the area. Peacetime conversion of industry and new industries maintained that population. The present international situation with its resulting concentration on preparedness is making added demands for industrial water, domestic water for the increasing population, and supplemental irrigation water for the production of food and fiber so essential to the defense effort. The delivery of water to the Salt Lake area from this project has been of utmost value in meeting its requirements. Therefore, the completion of the river channel construction should progress rapidly in order to obtain full irrigation potentialities. There is, however, an urgent need in the area for additional power. The Deer Creek powerplant and appurtenant works will permit the full feasible operation of the project as planned, and will replace energy and capacity lost by diversion of Weber River water to the Provo River project. The proposed plant will have an average output of 23,600 kilowatt-hours annually under present conditions. Any delay in the program proposed will necessarily retard the achieve-

ment of the above goals and probably result in increased project costs due to increases in cost of material and labor.

The total estimated cost of the project has been decreased from $33,960,171 to $33,393,290 (anticipated total obligations $33,160,853). This adjustment of the cost estimate is primarily due to reduction in power facilities requirement and minor savings from reduced quantities.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
CONSTRUCTION PROGRAM					
Deer Creek Division	($20,535,005)	($16,726,281)	($2,595,979)	($422,745)	($790,000)
Deer Creek Dam and appurtenant works	4,039,927	4,029,927	10,000		
Provo River Channel revision	1,255,332	595,787	436,800	222,745	
Weber-Provo diversion canal	1,095,556	1,092,056	3,500		
Duchesne Tunnel	9,436,500	7,317,167	2,119,333		
Provo Reservoir Canal diversion dam	231,562	231,562			
Provo Reservoir Canal	3,486,128	3,459,782	26,346		
Deer Creek power plant	910,000			188,000	722,000
Deer Creek substation	51,500			11,200	40,300
Deer Creek transmission line	2,500			800	1,700
General property	26,000				26,000
Aqueduct Division: Salt Lake Aqueduct	12,858,285	12,846,289	11,996		
Total cost	33,393,290	29,572,570	2,607,975	422,745	790,000
Construction facilities		37,110	−3,580	−33,530	
Stores		50,738		−50,738	
Project investigations		50,114	20,109	−67,223	−3,000
O. & M. during construction, Deer Creek Division	58,909	58,909			
Transfers, credits, and other expenditures	−291,346	−406,841	−18,000	133,495	
Total expenditures	33,160,853	29,362,600	2,606,504	404,749	787,000
Unliquidated obligations		293,504	−293,504		
Total obligations	33,160,853	29,656,104	2,313,000	404,749	787,000
Method of financing:					
Allotment, fiscal year 1953:					
General investigations			3,000		
Construction			2,270,000		
Prior year balance available			64,749	24,749	
Balance availble in subsequent year			−24,749		
Allotments required				380,000	787,000

Mr. McPHAIL. Mr. Chairman, I have a statement for the record. There is requested for 1954 for this project a total of $380,000. $180,000 is to complete the Provo River Channel revision, and $200,000 is for preconstruction activity and to start construction on the Deer Creek powerplant and substation, and for planning and design work for the Deer Creek transmission line.

(The statement referred to follows:)

CONSTRUCTION AND REHABILITATION, PROVO RIVER PROJECT, UTAH

The Provo River project as of last June 30 was approximately 88 percent complete, after a history of stops and starts during the last war. The Duschesne Tunnel, on which work has been most active the last couple of years, was virtually completed last December. When placed in service this tunnel will be used to divert water from the Duschesne River into the headwaters of the Provo River, on which the Deer Creek Reservoir is located. In order for the Provo River to handle both this additional water and that diverted from the Weber River, it is necessary to realine and reshape the channel and place protective

riprap along its banks to prevent flooding of adjacent lands and prevent scour. In some cases it is necessary to obtain easement along the river rather than provide for protective construction. This river channel revision work will be brought to completion in fiscal year 1954.

When Deer Creek Dam was being built, provision was made, under contract with the Provo River Water Users Association, for the future installation of a power plant by providing control works, powerhouse foundations and penstocks through the dam. On August 20, 1951, the construction of the 5,000-kilowatt powerplant and related substation and transmission line was authorized by the Secretary by a finding of feasibility.

The Bureau is now requesting funds to initiate work on designs, specifications, and other work necessary to permit award of construction contracts for this work by the end of the fiscal year. About 2 years will be required for construction and the plant is scheduled for initial operation by the end of fiscal year 1956. It is estimated that, in addition to returning the cost of the powerplant and appurtenant facilities, the revenues from the sale of power will contribute about $1,037,100 toward repayment of the construction costs of the other features. The Deer Creek powerplant will contribute to the area power supply and several municipalities have already indicated a desire to purchase power when available.

To permit the full operation of this project as planned and full utilization of its water resources, the Bureau is requesting an allotment of $380,000 for fiscal year 1954. With these funds work on the Provo River Channel revision will be completed; preconstruction activity and start of construction are scheduled on the Deer Creek powerplant and substation as well as planning and design work for the Deer Creek transmission line. The balance of construction is scheduled to bring the project to full completion by the end of fiscal year 1956.

POWERPLANT

Mr. JENSEN. The powerplant item is still in the budget?

Mr. MCPHAIL. Yes, sir; it is.

Mr. JENSEN. Have the local utilities offered to complete construction of the power plant?

Mr. MCPHAIL. Yes, sir; there have been offers to complete it. I might give you a little background of the project.

When the dam was built a penstock was installed and the substructure of a powerplant completed at that time. What is now necessary in order to get power out of the project, is to complete the superstructure of the building, put in generating units, build a substation, and about 2,000 feet of transmission line to reach the existing transmission lines of the Utah Power Co.

Former Secretary Chapman held a hearing in Provo, Utah in December 1952, to determine the desires of the people in that area as to the construction of the plant. There was considerable testimony introduced, including the desires of the several municipalities who have operating properties to have the plant completed by the Government, and they have applied among them for considerably more power than the plant would produce.

Mr. JENSEN. Is it not a fact that the Provo River Water Users' Association has for quite some time been anxious and willing to construct this powerplant and substation with their own money—since 1950? I believe that was first offered in November 1950.

Mr. MCPHAIL. I am not sure of the date, Mr. Chairman, but I think that is approximately right.

The have advanced offers for the construction of the remainder of the plant with funds to be secured, according to my understanding, from the Utah Power Co.

I do not understand that, as of this time, the water users have definitely made up their minds as to just which way they want to go.

The evidence is that insofar as contributions toward repayment of the irrigation features of the project are concerned, the water users will benefit more from the construction of the plant by the Government. Therefore, they have not, to my knowledge, definitely made up their minds which way they desire to go. We are awaiting their move in that connection at this time.

Mr. JENSEN. Of course, the question is why is it not better to let those who have the entire repayment responsibility for this $33 million project also have the responsibility for developing this power as they see fit with their own resources?

Mr. MCPHAIL. My understanding, Mr. Chairman, is that they are not satisfied themselves which way this construction should proceed. We are asking for an appropriation here so that if the decision is finally made for Government construction we will be able to proceed.

Mr. JENSEN. So you desire to proceed with the completing of this power plant, even though it has been indicated by the water users on the Provo River project that they would, under certain conditions, build this powerplant if given sufficient time and encouragement to do so? That is the answer, I believe; is it not, Mr. McPhail?

Mr. MCPHAIL. I think the answer is one which should be predicated on the repayment finally of the funds invested in this project by the Federal Government. The present studies indicate the Federal Government will be better assured of recovering its investment in the project if it completes the plant.

However, the Secretary of the Interior, so far as I know, has not made up his mind definitely which way to go on that, but he desires to be in a position of going either way, depending on what final action is taken by the water users.

NO POWER SHORTAGE

Mr. JENSEN. I have information, which I consider reliable, to the effect that there is no power shortage in that area, and that this plant is an unnecessary expenditure, whether it be considered alone or in whatever respect you consider it. Do you think that there is a power shortage in this area?

Mr. MCPHAIL. No, I do not think that there is a power shortage in this area. The loads are growing rapidly, however, and in this case there is a facility partially completed which, if completed, would allow the use of the energy now going to waste in that area to be used. There is a market for the power, as evidenced by the many applications for the output of the plant.

CONSIDERATION OF PLANT COMPLETION

Mr. JENSEN. I have information to the effect that the water users wanted to go right ahead with this plant, but that the Department of the Interior officials said "No, you cannot do it."

Mr. MCPHAIL. They have had before them for some time now, Mr. Chairman, a letter from the Secretary of the Interior as a result of the hearing, in Provo, Utah, which asked that they advise him in what manner they would recommend that he proceed.

Mr. JENSEN. When was that letter written?

Mr. McPHAIL. That letter was written, as I recall it, about 2 months ago. I think it might be well if I inserted a copy of it in the record.

Mr. JENSEN. All right.

(The matter referred to follows:)

(Following are excerpts from a 24-page letter. The remainder of the letter (not quoted) is largely testimony at the Provo, Utah, hearing.)

JANUARY 15, 1953.

J. W. GILLMAN,
President, Provo River Water Users' Association,
Provo, Utah.

MY DEAR MR. GILLMAN: In my letter to you dated December 2, 1952, I stated that, in order to determine what would constitute the most beneficial power development at Deer Creek Dam, I was calling a public hearing at Provo, Utah, on December 11, 1952. The hearing having been held and full consideration having been given to all of the matters presented I am in a position to make my finding and conclusions with reference to the proposal that the power project at Deer Creek be constructed by the association. Before stating my conclusions I believe it desirable to review the pertinent matters which were presented at the hearing.

* * * * * * *

CONCLUSIONS

(1) An early decision should be reached on whether the association now plans to complete the power facilities under either the Bureau plan or under its own plan in order that the stockholders of the association who do not use the Salt Lake Aqueduct, in event of nonconstruction, can be properly compensated for their proportion of the loss of the power benefits as the project will be utilized to a greater degree for municipal water supply through the aqueduct. Mr. Harris referred to such compensation when speaking of aeration benefits on page 172 of the record.

(2) There is a readily available market at reasonable rates for all the power which may be developed at the project, regardless of by whom developed.

(3) The association has not yet presented to the Department of the Interior a plan of development which would justify a decision that the association should undertake construction of the powerplant. Much as I would like to see the association construct and operate this plant there are certain provisions of law and contractual requirements which the association is obliged to meet.

If the association intends to finance the construction of the project it should present to the Secretary a definite plan for the construction of the project including engineering and economical appraisals made by its own consultants. Such a plan should be accompanied by written assurances of the availability of funds to cover the construction. The plan of operation for the project must assure full protection of the project water supply, including winter water power from the Weber River. The plan of development and the disposition of power shall be consistent with reclamation law. The plan should assure the water users of the largest credit possible toward defraying construction cost of the Deer Creek project. The plan should provide for operation of the powerplant in accordance with article 15 (e) of the 1938 power contract. Paragraph 38 (a) of the contract between the United States and the association contains the following provision:

"The association shall at all times have the right to use for the project purposes so much of the power produced as may be so required."

The feasibility of the project is dependent upon the continuing right to obtain winter power water from the Weber River. Power generated at the Deer Creek project is to be used as needed to compensate the power company for loss of generation at its Weber and Riverdale plants as provided in the 1938 contract. The use of power generated at the Deer Creek project for winter waterpower replacement was one of the project purposes contemplated in the above-cited provision.

If it is intended to proceed with the development of this power project by private financing or by contract with some third party, then the association should negotiate a contract with the Bureau of Reclamation which provides for the construction of the project by the water users while at the same time fully protecting the interest of all members of the Provo River Water Users' Association.

(4) In the alternative, I am still of the opinion that construction of the project by the Bureau of Reclamation will result in the maximum benefits, both to water and to power for all members of the association. I urge that the board of directors reconsider this matter immediately as the Bureau of Reclamation has in its budget for this fiscal year, which has been sent to Congress, funds for the initiation of the construction of the Deer Creek power project. It is requested that you notify the Secretary of the Interior within 60 days if you desire to proceed with the construction of the project with Federal financing. In the absence of assurances of support from the board of directors, it will be necessary that the request for funds be withdrawn.

(5) The proposal of the Utah Power & Light Co. to the Provo Water Users' Association is not before the Secretary at this time for any decision. However, it should be observed that the proposal is accompanied by so many conditions it cannot be said to "guarantee" the Provo Water Users' Association any specific net revenue which can be evaluated at this time. If a contract is finally negotiated within the framework of the existing proposal it would probably result in little net revenue to the association after deductions for winter water power losses.

Sincerely yours,

OSCAR L. CHAPMAN,
Secretary of the Interior.

Mr. JENSEN. Now, just what do the water users have to do to get permission to go ahead with the completing of this plant?

Mr. MCPHAIL. Well, I believe all they need is permission from the Secretary of the Interior.

Mr. JENSEN. All right. What part of this plant is already constructed?

Mr. MCPHAIL. The penstock and the substructure of the plant up to approximately the level of the generator floor.

Mr. JENSEN. What percentage of the project would you say is already constructed?

Mr. MCPHAIL. Well, I would say that it is perhaps 10 to 15 percent.

Mr. JENSEN. If a deal were made with the water users to complete this plant do you know whether or not they are willing to take it over and absorb the expenditure that has already been made for this structure?

Mr. MCPHAIL. I believe, Mr. Chairman, that that expense is now incorporated in the cost of the project for which they have undertaken the obligation to repay. That is my understanding.

Mr. FENTON. I have been very much interested in hearing Mr. McPhail say that there is no power shortage in this area. Is there any power shortage in any area in the Northwest?

Mr. MCPHAIL. My understanding is that there is a power shortage in the Northwest. I was not considering this particular locality as being closely associated with the Northwest. This is in Central Utah. This plant we are talking about is 5,000 kilowatt capacity, only.

Mr. FENTON. I know. Is there a dire shortage of power in any part of the Northwest, including this area?

Mr. MCPHAIL. The evidence is, Dr. Fenton, that during the fall of last year, they had to drop some of the load off of the system in order to carry the remainder of the load, which would indicate a shortage. I am not too intimately familiar with that situation, which is in the Bonneville area, but that is my general understanding.

Mr. FENTON. We have been hearing for a great many years about the shortage of power. With all of the construction that has been done with Federal money, I am just wondering when this shortage

is going to ease up, because many time it is not a shortage so much as it is the cheap power that they have been getting as compared to other parts of the country. The people of Pennsylvania and other States in the East are being saddled with it.

POWER RATE

Mr. BUDGE. Mr. McPhail, I note from your analysis of this project that the municipal water features account for $24 million of the total $33 million plus for the entire project. I also note that the municipal water features and the irrigation features are both to be repayable from power revenues. Now, why is it necessary for the Bureau to fix a 2-mill rate, which is much lower than on other bureau projects, and extend the payment of this municipal water project for 58 years?

Mr. MCPHAIL. I think that, perhaps, Mr. Lineweaver is better equipped to answer that part of the question than I am.

Mr. LINEWEAVER. I would like to look into that, Mr. Budge. I am not prepared right off the bat to give you an accurate and comprehensive answer, but I would like to submit it for the record.

Mr. BUDGE. It occurs to me that there might be some error here.

Mr. LINEWEAVER. I cannot understand that.

Mr. BUDGE. On page 60 of your document here entitled, "Special Data Requested by House Appropriations Subcommittee," you place the average power rate per kilowatt of firm power at 2 mills. Now, in most of the Bureau projects the firm power is substantially above that, and in this instance you have made the municipal water features repayable, as I read it, in 58 years with a 2-mill rate.

Mr. LINEWEAVER. No, that is an error.

Mr. EATON. May I clarify that for you in just a moment.

The total expenditures for the construction that has been done so far, for both the municipal water and for the irrigation features, are covered in full by repayment contracts with the Water Users' Organization, that is, the Provo River Water Users' Association.

Mr. BUDGE. Does that include the municipal water users too?

Mr. EATON. Yes, sir, that includes the municipal water features also.

The principal element of the Provo Water Users' Association plan is the Salt Lake Metropolitan Water District. The other elements are irrigation districts.

They have executed contracts which cover in full all expenditures that have been made heretofore and no power revenues are used at all in meeting those payments.

I believe the figures which are confusing are the figures which relate solely to the additional expenditures for the proposed Deer Creek powerplant. The figures you are looking at apply not to the municipal water and not to the irrigation water construction, but only to such additional expenditures as might be made for the proposed Deer Creek powerplant.

Mr. BUDGE. What is the 2-mill rate set forth on page 60?

Mr. MCPHAIL. I can clarify that, Mr. Budge. There is a stenographic error. You will note on page 60 there are 2 rates for power set out. The 2 mill is opposite the "firm" and 5½ mill is opposite the nonfirm. Those have been reversed for some reason, but the rate at

which "pay out" was figured on this project was 5½ mills, and as I recall, the figures indicate it will pay out in about 17 years.

Mr. BUDGE. That would bring it in line with other projects. I could not understand how this one came up with a 2-mill rate.

Mr. LINEWEAVER. That is undoubtedly an error in the transposition of the two figures, as Mr. McPhail stated. Does that clear up that question?

Mr. BUDGE. Yes.

POWER TO PAY OFF THE PROJECT

Mr. KIRWAN. What is the amount of money that they want to spend on the powerhouse there?

Mr. MCPHAIL. On the powerhouse, Mr. Kirwan, $188,000; on the Deer Creek substation, $11,200 and on the transmission line, $800, or a total of $200,000 for the three features in fiscal 1954.

Mr. KIRWAN. What is the total amount proposed for this powerhouse project?

Mr. MCPHAIL. The total amount for the power plant is $910,000.

Mr. KIRWAN. Well, do you think that is worthy of very serious consideration at this time?

Mr. MCPHAIL. Well, it is important to the water users from a repayment standpoint, and, apparently, important to the municipal operations in the area for those who are anxious to purchase the additional power from this source for their requirements.

Mr. KIRWAN. It is important for the water to pay off on that irrigated land from power, is that what you mean?

Mr. MCPHAIL. That is correct.

Mr. KIRWAN. You would not generate much power there on $900,000.

Mr. MCPHAIL. It is not very large; 5,000 kilowatts.

Mr. KIRWAN. With that amount, if you had a half-dozen employees there eating it up, there would not be much left. Why stick that in there?

Mr. MCPHAIL. Well, the item is in there, I believe, because of pressures that have been put on the Department and the Bureau, particularly over the last year, to see that this potential power drop is developed. As a result of that, as I previously mentioned, the former Secretary of the Interior held a hearing in Provo, Utah, last fall for a discussion of the matter and it has not been resolved insofar as the desires of the water users being officially made known to the Secretary.

Mr. KIRWAN. Whether it is in Utah or out of Utah, this committee down through the years has been giving money in the name of irrigation, and the fact the steel companies helped themselves to that water for a steel plant out in there is something that is not done anywhere in the East. Where were the water users on that thing, if they thought so much of this land that they are hollering about? They did not rise up and demand to know why this water was being given to the steel plant.

I would like to see land irrigated and I would like to see power generated, where it is being wasted and going off to the sea. It is one of our resources, but I am not in favor of building those things. I again say when the people in that part of the country did not put up a complaint when this water was used, and plenty of it, for the United

States Steel Corp., no one came to the defense of the farmers on that day, nor did they come themselves, but they held a meeting out there last year and they want this power developed.

If that is all the power they are going to develop out there—just a few kilowatts—I do not think I would be very much in favor of putting a powerplant there.

Mr. JENSEN. This powerplant falls in the same category as the powerplant they are asking for on the Roza division in Washington State, where they want to build a powerplant for an individual irrigation project. In an area where there is plenty of cheap power and they come in and ask us to appropriate money to build a powerplant for a specific project of this size, it does not "square" with good business principles and common, ordinary, American horsesense. I cannot see it. I cannot see where it can be justified by any stretch of the imagination.

If you needed the power and there was a power shortage in the area and you could not get power any other way to pump water onto the land, that would be a different matter, but in both of these areas you have about the cheapest power rates in America and an adequate supply. Yet, may I say, the Department has the audacity to come in here and ask us to appropriate money for additional powerplants for an individual project.

I certainly agree with you, Mr. Kirwan. We have other places where we can appropriate money for irrigation and reclamation to much better advantage than we can spend it for powerplants of this nature.

WEBER BASIN PROJECT, UTAH

Mr. JENSEN. The next item which we will take up is the Weber Basin project in Utah.

At this point, without objection, we will insert in the record the special data sheets, pages 61 and 62, which were requested of the Bureau and pages 412–417 of the justification.

(The matter referred to follows:)

CONSTRUCTION

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures		$1,350,000	$6,776,000
Total obligations		1,350,000	6,776,000

HISTORY OF PROJECT DEVELOPMENT

Location

In north-central Utah comprises all of Davis, Weber, and Morgan Counties, most of Summit County, and a small portion of Box Elder County.

Purpose

Irrigation, municipal water, flood control, power, recreation, and fish and wildlife benefits.

Authorization

Act of August 29, 1949 (63 Stat. 631).

Initial date

Planning, 1939.
Advanced planning, September 1949.
Construction, December 1952.
Date of functional completion of construction. Work scheduled through 1959. Detailed schedule thereafter not available.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1953, $1,350,000.

COSTS

Original estimated cost	$69,534,000
Allocation of cost:	
Irrigation	40,234,000
Flood control	5,900,000
Municipal	18,744,000
Recreation and wildlife	4,656,000
Present estimated cost	70,385,000
Allocation of cost:	
Irrigation	39,483,000
Flood control	7,393,000
Municipal	18,211,000
Recreation	3,568,000
Fish and wildlife	1,730,000

REPAYMENT

Status of repayment contract negotiations. Repayment contract providing for repayment of $57,694,000 in 60 years by Weber Basin Water Conservancy District was executed December 12, 1952.
Amount to be repaid and repayment period: The irrigation allocation of $39,483,000 and the municipal water allocation of $18,211,000 are to be repaid in 60 years by water users of the Weber Basin Water Conservancy District. Irrigation blocks to be established will have up to 10 year development periods, but no development period applies to municipal water.
Repayment of costs allocated to irrigation:

Water users	$26,260,000
Municipal water	13,223,000
Total	39,483,000
Repayment costs per acre:	
Federal investment per acre	$527
From irrigators	350
From municipal revenue	177
Annual water-user charges:	
Construction	5.85
Operation and maintenance	2.40
Total	8.25

Gross crop income per acre resulting from project irrigation (estimate for mature stage of development), $150.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full				50,490
Supplemental				24,390
Total				74,880

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$68,670,000
Total obligations to June 30, 1952		0
Allotment, fiscal year 1953	$1,350,000	
Total obligations, fiscal year 1953		1,350,000
Allotment, fiscal year 1954	$6,776,000	
Total obligations, fiscal year 1954		6,776,000
Balance to complete		60,544,000

JUSTIFICATION OF ESTIMATE

Authorization

The Weber Basin project was authorized under the act of August 29, 1949 (63 Stat. 631).

Location

The Weber Basin project located in north central Utah comprises all of Davis, Weber, and Morgan Counties, most of Summit County, and a small portion of Box Elder County. The project works extend west from storage facilities on the Weber River and its tributaries to lands between the Wasatch Range and Great Salt Lake including 25 municipalities in Davis and Weber Counties. About one-fifth of Utah's population lives within the project area. Ogden, the second largest city in Utah, is located near the center of the project, and Salt Lake City, the capital and largest city in Utah, is situated immediately south of the project.

Description

The purpose of this project is to develop the basin's unused water for irrigation and municipal and industrial needs, provide needed drainage outlets for the waterlogged lands, protect lands and improvements from flood damage, produce hydroelectric power for irrigation pumping, increase recreational opportunities, improve fish and wildlife resources, and reduce the mosquito infestation in the project area. Facilities of the project include Pineview Dam and Reservoir, Wanship Dam and Reservoir, Willard Dam and Reservoir, Lost Creek Dam and Reservoir, East Canyon Dam and Reservoir, Stoddard diversion works, Slaterville diversion works, Willard pumping plant, Layton pumping plant, Gateway canal and tunnel, Weber aqueduct, Davis aqueduct, Willard gravity canal, Willard pump canal, Layton canal, Warren canal, enlargement, lateral system, drainage system, gateway powerplant, Wanship powerplant and transmission line. The project is designed to furnish 164,600 acre-feet of water to 50,500 acres of potentially productive land now unirrigated, and 24,400 acres now only partially irrigated. Approximately 49,000 acres of waterlogged land will be reclaimed. More than 40,000 acre-feet of water will be made available for municipal and industrial use in Davis and Weber Counties. About 65,500 acre-feet of water that will appear below reclaimable lands will be used for migratory waterfowl refuges. Powerplants will have an installed capacity of 5,400 kilowatts.

Repayment

A repayment contract for $57,694,000 with the Weber Basin Water Conservancy District was executed on December 12, 1952. (Preparations are being made to negotiate contracts relating to the enlargement of Pineview Dam and Reservoir and modification of power production at existing powerplants. These contracts should be ready for execution early in fiscal year 1954.) The remaining costs are allocated, according to law, to the nonreimbursable features of the project.

Status

On July 29, 1952, the definite plan report was approved by the Commissioner and on December 10, a contract for construction of the Gateway tunnel was awarded. During the current year preconstruction activities consisting of surveys, materials and foundation investigations, and acquisition of right-of-way

will be completed and the necessary information obtained for the designs and specifications for Wanship Dam and Davis aqueduct.

Work proposed, fiscal year 1954

The program for fiscal year 1954 includes continuation of construction on the Gateway tunnel with $1,200,000 programed for contractors' earnings to permit continuous tunneling operations throughout the year. During the first quarter, designs and specifications will be completed for Wanship Dam and the Davis aqueduct leading to award of contracts and beginning of construction during the second quarter. During the last half of the year, designs and specifications will be prepared for Stoddard diversion works; Gateway canal; Weber aqueduct; Gateway power plant and switchyard; and Wanship power plant, switchyard, and transmission line preparatory to awarding of construction contracts on these features during the last quarter. Preconstruction activities on Pineview Dam and Reservoir (enlargement) will be accomplished during the first half of the year and designs and specifications completed by the end of the year. All necessary rights-of-way for respective features will be acquired prior to the award of construction contracts.

Justification

The Weber Basin project is of extreme importance as a source of additional water to the portion of Utah centering around the city of Ogden. The project area is now suffering from inadequate water supplies. The project is designed to furnish water for municipal, industrial, and irrigation use in an area that has become one of the most important supply bases for the armed services in the western United States. A full description of the relationship of the project to the defense installations appears in the Senate hearings on the Interior hearings on the Interior Department bill for the fiscal year 1952, pages 2042 to 2049, inclusive.

In brief, in the project service area, embracing Weber and Davis Counties, are located the Utah General Depot, Ogden Arsenal, Clearfield Naval Supply Depot, and Hill Air Force Base. The depots and the arsenal constitute the western center for serving the Pacific coast and Pacific overseas military operations. Placed in this location for protection against possible west coast attacks, the services are continuing to increase and expand their facilities in Davis and Weber Counties. Primarily, as a result of their activities, the population increase in these counties from 1940 to 1950 was 46.4 percent for Weber County and 94.9 percent for Davis County; an additional increase of over 5 percent in both counties has occurred since the 1950 census was taken. This large population increase has placed a heavy burden on the existing sources of municipal water, industrial water, and food.

Construction of the project works is the only feasible answer for supplying both irrigation and municipal water demands that existed at the time of authorization and that have become increasingly acute. The features of the project which are required to accomplish initial delivery of water should be completed as rapidly as possible to provide the urgently needed water for several towns and cities experiencing critical shortages. In order to receive maximum utilization of the project, it should be completed at the maximum efficient rate. Any delay in the program proposed will necessarily retard the achievement of municipal, industrial, and agricultural development.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Pineview Dam and Reservoir (enlargement)	$4,753,000	$150,300	$4,700	$297,000	$4,301,000
Wanship Dam and Reservoir	8,973,000	150,000	447,461	2,509,000	5,866,539
Willard Dam and Reservoir	8,700,000	74,700	8,300		8,617,000
Lost Creek Dam and Reservoir	3,580,000	66,600	3,400		3,510,000
East Canyon Dam and Reservoir (enlargement)	2,130,000	40,000	2,000		2,088,000
Stoddard diversion works	401,000	9,600	400	49,000	342,000
Slaterville diversion works	414,000	10,600	400		403,000
Willard pumping plant	2,010,000	30,000	2,000		1,978,000
Layton pumping plant	426,000	10,600	400		415,000
Gateway canal and tunnel	8,810,000	234,000	692,500	1,972,000	5,911,500
Weber aqueduct	1,250,000	24,700	1,300	139,000	1,085,000
Davis aqueduct	11,700,000	224,982	111,057	1,130,000	10,233,961
Willard gravity canal	2,573,000	29,500	2,500		2,541,000
Willard pump canal	2,845,000	40,200	2,800		2,802,000
Layton Canal	1,660,000	30,400	1,600		1,628,000
Warren Canal (enlargement)	635,000	5,300	700		629,000
Lateral systems	1,110,000	20,000	1,000		1,089,000
Drains	5,015,000	90,060	59,000	75,000	4,791,000
Gateway powerplant	1,430,000	24,700	1,300	163,000	1,241,000
Wanship powerplant	461,000	8,800	200	57,000	395,000
Gateway switchyard	70,000			55,000	15,000
Wanship switchyard	43,000			2,000	41,000
Wanship transmission line	21,000			7,000	14,000
General property	1,375,000	25,000			1,350,000
Total cost	70,385,000	1,299,982	1,343,018	6,455,000	61,287,000
Construction facilities			12,000	209,000	−221,000
Stores			10,000	112,000	−122,000
Operation and maintenance during construction	100,000				100,000
Transfers, credits, and other expenditures	−1,815,000	−1,299,982	−15,018		−500,000
Total expenditures	68,670,000		1,350,000	6,776,000	60,544,000
Total obligations	68,670,000		1,350,000	6,776,000	60,544,000
Method of financing:					
Allotment, fiscal year 1953			1,350,000		
Allotments required				6,776,000	60,544,000

Mr. JENSEN. You are asking for $6,776,000 for this project in fiscal 1954?

Mr. MARKWELL. Yes, sir.

Mr. JENSEN. Will you explain your reasons for asking for this amount?

Mr. MARKWELL. Mr. Chairman, I have a prepared statement on that project which I would like to submit for the record.

Mr. JENSEN. We will be glad to have it, and if you desire, you may give us a brief summary of the statement.

(The matter referred to follows:)

The Weber Basin project, authorized in August 1949, with initial construction funds appropriated for fiscal year 1953, will fully conserve and utilize the limited water supply of the basin to meet the critical needs for municipal and irrigation water. Full project development will provide an average of 270,000 acre-feet of water annually, including 164,600 acre-feet for irrigation of some 75,000 acres of land, more than 40,000 acre-feet for municipal and industrial use and about 65,000 acre-feet that will appear below reclaimable lands and be used for migratory waterfowl refuges. The project will also reclaim some 49,000 acres of waterlogged land. The additional water developed by the project is of extreme importance to the city of Ogden, Utah, and municipalities in the area as well as defense installations at Utah General Depot, Ogden Arsenal, Clearfield Naval Supply Depot, and Hill Air Force Base.

A repayment contract covering $57,694,000 of the 70,385,000 project cost, the largest repayment agreement in Federal reclamation history, was executed by the Weber Basin Conservancy District on December 12, 1952.

Construction on the Weber Basin project was initiated during fiscal year 1953 with award of contract for Gateway tunnel in December. Preconstruction activities consisting of materials and foundation investigations, preparing designs and specifications and acquisition of right-of-way for other major project features has been under way during the year preparatory to large scale construction during fiscal year 1954. The $6,776,000 requested for fiscal year 1954 is needed for continuation of construction of the Gateway tunnel which will require $1,200,000 for contractor's earnings and for construction contracts to be awarded during the year on other project features. Major contract awards will be for the 155-feet high Wanship Dam and 1,400-kilowatt powerplant, 700 cubic feet per second Stoddard diversion works, 4,000-kilowatt Gateway powerplant, 9 miles of Gateway canal, and 28 miles of pipelines on Weber and Davis aqueducts. Designs and specifications for Pineview Dam and Reservoir will be completed during the fiscal year.

The Weber Basin project is of extreme importance as a source of additional water to the portion of Utah centering around the city of Ogden. Within the project boundaries are located over one-fifth of Utah's entire population and one of the most important supply centers for the armed services in the Western United States. The depots and the arsenal constitute the Western center for serving the Pacific coast and Pacific overseas military operations. Placed in this location for protection against possible west coast attacks, the services are continuing to increase and expand their facilities in Davis and Weber Countries. Primarily, as a result of their activities, the population increase in these counties from 1940 to 1950 was 46.4 percent for Weber County and 94.9 percent for Davis County; an additional increase of over 5 percent in both counties has occurred since the 1950 census was taken. This large population increase has placed a heavy burden on the existing sources of municipal water, industrial water, and food. Construction of the project works is the only feasible answer for supplying both irrigation and municipal water needs at the area which are becoming progressively more acute. All funds requested are needed to continue work at the maximum efficient rate.

Mr. MARKWELL. This project was authorized under the act of August 29, 1949, and the first funds for construction were appropriated last year by the Congress, in the amount of $1,350,000. Construction has been started. The Weber Basin is truly a multipurpose project, in that it involves the development of almost all benefits which can be derived from the control of water. It is primarily for the conservation of irrigation water and municipal water. It encompasses drainage, recreational benefits, fish and wildlife benefits, and incidental power benefits.

Mr. JENSEN. Does that complete your statement?

Mr. MARKWELL. Yes, sir; unless you have further questions.

Mr. JENSEN. Mr. Lineweaver, do you have a statement to make on this project?

REPAYMENT CONTRACT

Mr. LINEWEAVER. The only thing I wanted to add to what Mr. Markwell said, Mr. Chairman, is that the conservation district, organized under Utah State laws, had an election last December and had a vote on this question which was overwhelmingly in favor of the repayment contract of some $57 million, which is the largest repayment contract that has yet been executed by the Bureau of Reclamation. It was approved by the voters at the polls and the district has executed the repayment contract.

POWERPLANTS

Mr. JENSEN. There is money in this request for the building of a powerplant on this project, is there not?

Mr. MARKWELL. Yes, sir; there are some small powerplants, wherein we can develop and use the falling water to advantage to develop power primarily for irrigation pumping. The water is there and the drop is there and it is economical to develop a small amount of power. It is my understanding that it would be put into the system of the Utah Power & Light Co., assuming that a satisfactory agreement can be worked out.

Mr. JENSEN. What is that powerplant estimated to cost?

Mr. MARKWELL. There are two, as I recall, there, sir. There is the Gateway powerplant of 4,000-kilowatt capacity, estimated to cost $1,430,000 and the Wanship powerplant of 1,400-kilowatt capacity, estimated to cost $461,000. In addition, there will be a small amount required for the switchyards and an amount of $21,000 for a very short transmission line to tie into the existing system. This is not a power project, as such.

Mr. JENSEN. I realize that. At the estimated cost of this powerplant, what would the cost per kilowatt amount to, Mr. Markwell?

Mr. MCPHAIL. It would be, roughly $350 per kilowatt for each one of them.

Mr. JENSEN. That is above the average, is it not, for hydropower?

Mr. MCPHAIL. No, sir; it is not excessive for hydroplants.

HYDROPOWER IS EXPENSIVE POWER

Mr. JENSEN. You can produce power at a steam plant for about one-third of that amount, can you not?

Mr. MCPHAIL. Steam plant costs are ordinarily from $150 to $200 a kilowatt. However, that is only the first cost. After that, there is a continuing necessity for purchase of fuel for the generation of energy, whereas on the hydroplant, once you have your plant completed, your only expenses are in connection with operation and maintenance.

Mr. JENSEN. Yes; but there has been testimony here by Ben Creim, who used to be, and was, for years the engineer on the Central Valley project, and then finally became administrator of the Southeastern Power Administration. He stated to this committee several years ago that hydroelectric power was the most expensive kind of power that could be produced, and because of that the Central Valley project had to be extremely careful not to charge P. G. & E. too much for the power from Shasta Dam, or the Pacific Gas & Electric Co. could not afford to buy it, since they could produce it for less. Also, during these periods Douglas Wright, administrator of the Southwestern Power Administration, has testified to the same thing.

PUMPING POWER

I believe you stated this plant was to cost $1,430,000 for the Gateway powerplant and for the Wanship Dam powerplant the cost is estimated as $465,000. You have approximately $2 million involved there.

How much construction work has been done there, or has any such work been done to date? I do not think there has been anything done on those projects.

Mr. MCPHAIL. Nothing has been done to date.

Mr. JENSEN. This is another case where there is sufficient power at very reasonable rates in that area, is it not?

Mr. MCPHAIL. These two plants would be primarily for pumping-power purposes, and will, in our opinion, produce power at a lower cost than power can be purchased.

Mr. JENSEN. I wonder.

Mr. MALKWELL. May I explain it this way, Mr. Chairman: Primarily these plants will produce power when we are running water down the canals for irrigation purposes and the power drop makes the power available.

Mr. JENSEN. I know how it operates, but the power you would purchase would do exactly the same thing. There is no difference in electric power, is there? Would not power from some other plant do the same thing and accomplish the same purpose as power from this plant?

Mr. MCPHAIL. Certainly, the power would be just as useful, no matter where you get it from. Again, this is a question of making use of a potential possibility for generating power and achieving some economies for the irrigation district.

Mr. JENSEN. Senator Watkins, of Utah, and Congressman Dawson and Congressman Stringfellow appeared before the committee a few days ago. They were very anxious to have this project continued at the proper speed and they told us about the value of the project and the great need for water, not only for irrigation purposes, but for municipal purposes and for home consumption.

Mr. FENTON. Mr. Chairman, may I ask at that point, are there any other irrigation districts than have the same kind of setup? If there any precedence for this, or is this just a start in regard to these particular projects which have been drawn to our attention in the last few days?

Mr. MCPHAIL. Dr. Fenton, we have a number of projects in operation that are essentially of this same character. The Newlands project in Nevada, the Strawberry Valley project in Utah, Minidoka project in Idaho, the North Platte project in Nebraska, and the Salt River project in Arizona. Also there are a number of others that have similar setups to a more or less degree.

Mr. JENSEN. They were built at a time, of course, when dollars were not as scarce as they are today, and did they have the same power shortage? Was there a power shortage in those areas that time?

Mr. MCPHAIL. I really could not say. It may have been the influence of economics, rather than the question of power shortage. I do not recall what the situations were.

Mr. JENSEN. When those projects were built we did not have the power-producing facilities or the transmission facilities that we have today. I do not suppose, on an average, we had 10 percent as much power, plus facilities, when most of those projects were built as we have today.

Mr. MCPHAIL. I think that is right.

Mr. JENSEN. The rates that were charged were between 8 and 10 cents per kilowatt 25 years ago or 30 years ago and now they are down to 4 and 5 mills. So, it does make a difference whether we built powerplants for these projects at that time or whether we build them now.

Mr. FENTON. I think that answers the question very well.

SATURDAY, MARCH 28, 1953.

CONSTRUCTION AND REHABILITATION AND OPERATION AND MAINTENANCE

COLUMBIA BASIN PROJECT, WASHINGTON

Mr. JENSEN. Now, we will turn to the Columbia Basin project, Washington, and we will insert in the record at this point pages 63, 64, 65, 66, and 67 of the special data and summary sheets which have been furnished to the committee by the Bureau.

We will also insert in the record pages 420 through 426 of the construction justification and pages 177 through 184 of the operation and maintenance justification.

(The matter referred to is as follows:)

CONSTRUCTION, OPERATION, AND MAINTENANCE

Construction

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$440,552,776	$23,327,043	$21,930,000
Unliquidated obligations	2,784,037	−2,784,037	
Total obligations	443,336,813	20,543,006	21,930,000

Operations and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$2,011,844	$3,109,000	$3,682,900
Unliquidated obligations	48,848		
Total obligations	2,060,692	3,109,000	3,682,900
Appropriation or estimate	[1] 2,386,600	3,109,000	3,682,900

[1] Allocation of $325,908 in excess to needs.

HISTORY OF PROJECT DEVELOPMENT

Location

The project is located in central Washington with its major feature, the Grand Coulee Dam, situated on the Columbia River about 95 miles west of Spokane, Wash. Project works extend south from Grand Coulee Dam over 125 miles to the vicinity of Pasco, Wash., and are located in portions of Grant, Adams, Douglas, Franklin, Walla Walla, and Okanogan Counties.

Purpose

Irrigation, power, flood control, navigation, and river regulation.

Authorization

Initially authorized by section 2, Rivers and Harbors Act of August 30, 1935 (49 Stat. 1028).

Reauthorization

By Columbia Basin Project Act of March 10, 1943 (57 Stat. 14).

Initial date:

Planning, 1904.
Advanced planning, 1933.
Construction, 1934.

Date of functional completion of construction * * *. Work scheduled through 1960. Detail program not available thereafter.

Fiscal year and amount of initial allotment of appropriations for construction * * * fiscal year 1934, $63 million.

COSTS

Original estimated cost	$487,030,228
Allocation cost:	
Irrigation	360,274,234
Power	99,828,994
Flood control and navigation	1,000,000
Downstream regulation	25,927,000
Present estimated cost	754,476,000
Allocation of cost:	
Irrigation	538,026,947
Power	158,404,633
Flood control and navigation	1,000,000
Downstream regulation	40,604,980
Land sales, etc	16,126,000
Contributions (Washington State)	313,440

REPAYMENT

Status of repayment contract negotiations. Repayment contracts covering in full the amount to be repaid by the water users were executed in 1945 with the three irrigation districts of the project.

Amount to be repaid and repayment period:

	Amount	Overall repayment period		Total
		Regular	Development	
Irrigation	$87,465,000	40 years	10 years	50 years.
Power	[1] 649,571,566	1941 to 2022		[2]

[1] Includes repayment of $40,604,980 allocated to downstream regulation for future power development.

[2] Construction costs allocated to commercial power will be repaid within 50 years from the date the individual facility becomes revenue producing.

Repayment of costs allocated to irrigation:	
Water users	$87,465,000
From power revenues	450,561,947
Total	538,026,947
Repayment costs per acre:	
Federal investment per acre	$523.00
From irrigators	85.00
From power revenue	438.00
Annual water-user charges:	
Construction	2.15
Operations and maintenance	4.25
Total	6.40
Gross crop income per acre resulting from project irrigation (estimate for mature stage of development)	75.00

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full	73,000	131,000	187,000	1,029,000
Supplemental				
Total	73,000	131,000	187,000	1,029,000
Power (kilowatts)	1,974,000	1,974,000	1,974,000	1,974,000
Power rates (mills per kilowatt-hour):				
Firm	(1)	(1)	(1)	(1)
Nonfirm	(1)	(1)	(1)	(1)

[1] All power generated for commercial power is sold by the Bonneville Power Administration. BPA returns an annual revenue to the Bureau to repay the project annual expenses plus amortization.

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Irrigation facilities:			
Actual June 30, 1952	4		
1953	3	5	
1954	25	5	
Power facilities:			
Actual June 30, 1952	380	2	
1953	468	2	
1954	460	2	
Joint facilities:			
Actual June 30, 1952	95	5	
1953	105	6	
1954	105	6	
District headquarters charges:			
Actual June 30, 1952			28.0
1953			43.8
1954			52.1
Regional CPA services:			
Actual June 30, 1952			2.3
1953			5.3
1954			6.6
Total:			
Actual June 30, 1952	479	7	30.3
1953	576	13	49.1
1954	590	13	58.7

NOTE.—Other project statistics, see page BR-183.

PROPOSED NEW ADDITIONS

Modifications to the outlets of Grand Coulee Dam to facilitate operation for flood control, at an estimated cost of $2,750,000, were recommended by the Secretary in submitting the comprehensive report on the entire Columbia River Basin to the Congress. (See H. Doc. 473, 81st Cong., 2d sess.)

Investigations are in progress to determine the feasibility of adding an additional power installation of more than 500,000 kilowatts to the existing plant at Grand Coulee Dam. The report is expected to be completed at the beginning of fiscal year 1954.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$757,050,000
Total obligations to June 30, 1952		443,336,813
Allotment, fiscal year 1953	$19,680,000	
Prior year balance available	863,000	
Total obligations, fiscal year 1953		20,543,006
Allotment, fiscal year 1954		21,930,000
Total obligations, fiscal year 1954		21,930,000
Balance to complete		271,240,181

JUSTIFICATION OF ESTIMATE

Authorization

The Columbia Basin project was initially authorized by section 2, Rivers and Harbors Act of August 30, 1935 (49 Stat. 1028); authorized and reauthorized by Columbia Basin Project Act of March 10, 1943 (57 Stat. 14).

Location

The project is located in central Washington with its major feature, the Grand Coulee Dam, situated on the Columbia River about 95 miles west of Spokane, Wash. Project works extend south from Grand Coulee Dam over 125 miles to the vicinity of Pasco, Wash., and are located in portions of Grant, Adams, Douglas, Franklin, Walla Walla, and Okanogan Counties.

Description

The project has a total rated electrical generating capacity of nearly 2 million kilowatts and is to furnish water to approximately 1,029,000 acres of new land. Primary facilities include the Grand Coulee Dam, the right and left powerplant, adjoining switchyards, and the adjacent primary irrigation pumping plant, all at Coulee Dam; primary irrigation works including the 26-mile Equalizing Reservoir, the Main, West, East Low, and East High Canals, served by releases from the Equalizing Reservoir; and the Potholes Canal system, served from the Potholes Reservoir in the central portion of the project; and laterals, drains, pumping plants, operating facilities, and other properties for the irrigation of more than 1 million acres of new land. Presently authorized generating installations were completed in 1951. Initial irrigation from the primary works commenced in 1952 when water was made available to about 66,000 acres of irrigable land. Facilities for additional acreages averaging about 55,000 acres in each year will be completed on a schedule looking to the irrigation of over 440,000 acres by 1959.

Repayment

Repayment contracts have been entered with the three Columbia Basin irrigation districts established within the project area providing for irrigation construction cost repayment averaging approximately $85 per acre. The balance of project construction cost, exclusive of a $1 million nonreimbursable allocation to navigation and the cost of certain self-liquidating programs, will be repaid from commercial power and pumping power revenues.

Status

Construction commenced in 1934 and by June 30, 1953, will be about 61 percent complete. During fiscal year 1953 structural and equipment painting and other completion work on the dam, powerhouses, and pumping plant will be under way and additional equipment items for transforming and switching installations will be procured or on order. River-channel improvement work will continue. Within the limits of available funds, the engineering board's recommendations for structural and equipment modifications will be made within the dam, the pumping plant and the powerhouses to accomplish the isolation of these features and thereby prevent or localize a recurrence of the March 14, 1952, power outage. A considerable portion of the work on streets, utilities, and general-service facilities at Coulee Dam has been completed, although some activities will continue during the current year. Two of the 65,000-horsepower pump units at Grand Coulee are in operation and installation of the first 6 units will be completed in fiscal year 1953. Initial releases from the equalizing reservoir were made in August 1951. Major contract construction has been completed on the primary irrigation works through the main canal. By the end of fiscal year 1953 other completed work will include the West Canal through the Frenchman Hills

Tunnel, the East Low Canal through the fourth section and the Potholes East Canal through the fourth section. Work will be under way on the fifth section of the East Low Canal. Initial irrigation service was provided in the spring of 1952 for the first 66,000 acres to be served from the primary irrigation works. Laterals and related facilities serving the 58,000 acres of 1953 land will be completed and initial irrigation of these acreages will commence in the spring of 1953. Lateral construction for 1954 acreages will be well along by the end of fiscal year 1953, and contracts will have commenced for the construction of laterals and other facilities for 1955 lands. Other necessary facilities, including relift pumping plants, related transmission facilities, drains, permanent operation and maintenance shops, offices, warehouses, dwellings, and necessary temporary camps will be under construction. Priming, puddling, testing, and necessary deferred or supplemental construction on completed work will be under way including contracts for the sealing of the second and third sections of the Potholes East Canal, and the rehabilitation of the EL16 lateral. Activities under agreements with the United States Geological Survey, Fish and Wildlife Service, Weather Bureau, and other agencies will continue. The project-development program will be increasingly active as the influx of settlers continues and will include planning new towns. A fifth development farm will be constructed and cooperative undertakings in conjunction with the State college will be carried on. Purchase of settlement land will continue. Investigations to determine the necessity for and feasibility of supplying municipal and industrial water from project irrigation work to communities in the Columbia Basin area will be completed. Feasibility investigations for additional generating capacity at Grand Coulee Dam will also be completed including the necessary geological exploratory work. A report on the feasibility of utilizing Grand Coulee Dam for flood control will be prepared.

Work proposed, fiscal year 1954

The program for fiscal year 1954 provides for the continuation of river-channel improvement work. Structural modifications isolating the dam, powerhouses, and pumping plant will be under way and interior finish work on these structures will continue. Construction completion in the town and on the service facilities at Coulee Dam will be under way and will include the program for slope stabilization and ground cover. A 287-kilovolt autotransformer bank is to be installed in the right switchyard. Irrigation works, either complete or under construction by the end of the year, will extend to the fifth section of the West and East Low Canals and through the Eltopia branch of the Potholes East Canal. Right-of-way around the shore lines of Moses Lake and along the alinement of the Esquatzel Wasteway will be purchased. Laterals and related facilities serving 56,000 acres of 1954 lands will be completed during the fiscal year and initial irrigation of these blocks will commence in the spring of 1954. Contracts will be under way or commencing on facilities for 1955 acreages and work on facilities serving the 1956 acreages will be started. Operating headquarters, ditchriders' and pump operators' housing in the isolated areas of the project will be constructed, and necessary equipment and temporary construction facilities will be provided. The settlement land purchase and project development programs will continue and will include planning new towns. Cooperative undertakings with the State college and other Government agencies will be carried on. Priming, puddling, and testing and necessary deferred or supplemental construction on completed works will continue and will include a contract for blanketing a portion of the fourth section of the West Canal.

Justification

A tremendous investment has been made over the past 18 years in the primary facilities required for the irrigation of the Columbia Basin. By June 30, 1952, the cost of Grand Coulee Dam and related multipurpose facilities in that area; the primary irrigation works, including the Grand Coulee pumping plant, equalizing reservoir, and the Main Canal system; and the large canals and structures completed in the West, East Low, and Potholes East areas approximated $300,000,000. The major task remaining to realize the return on this substantial investment is the construction of lateral distribution systems and related facilities. The 66,000 acres for which facilities were completed during the past year represent the first of a series of significant additions to the productive capacity of the Pacific Northwest which will be achieved as the irrigated acreage is increased and the tremendous capacity of the primary irrigation structures is put to work. During fiscal year 1954 construction for 1955 acreages will be nearing completion and construction for 1956 acreages begun. These acreages are necessary in order that an operating system and an irrigated

acreage of the minimum size required for efficient, self-supporting operations over any prolonged period may be achieved. The rate of settlement and farm development on the 1952 acreages has proceeded at about the rate expected. Development work has commenced on 425 of the 927 full-time farm units comprising the 1952 acreage.

Water has been purchased for nearly 400 units. The percentage of lands planted to crops within individual farm units has exceeded expectations with an average of 78 percent of each farm unit taking water being planted to crop by the summer of 1952 compared with the 50-percent development which had been predicted. The land-development assistance furnished to settlers by the assistant county agents working under the auspices of the Washington State Agricultural Extension Service in cooperation with the Bureau of Reclamation, and the favorable concentration of heavy land-leveling equipment are major factors contributing to the favorable development rate which exceeds the 50 percent development of 50 percent of the farms historically considered as representing excellent progress for the first year of new irrigation development.

The start of irrigation on the sizable 1952 acreage has clearly demonstrated the importance of the joint efforts of the State, county, and local governments, as well as other private and public groups, in providing the facilities and services essential to successful development of the lands once the water is available. In the Columbia Basin at the present time, as in the past few years, road programs of four counties and of the Washington State Department of Highways are being pushed forward aggressively, with special provision for the financing of county roads within the basin area being provided during the Washington State legislative session of 1951. The domestic water problem is being met by the cooperative efforts of the Bureau of Reclamation, the Washington State Agricultural Extension Service, the Farmers Home Administration, and the settlers. Construction and pre-construction activities to develop adequate school facilities are moving forward in step with the rate of project development. Processing plants for agricultural production (private enterprise) are establishing the all-important facilities for handling crops from the new lands in a timely fashion, thus contributing significantly to the opportunities for a successful early development. During the past year plans have been completed and sites purchased by 2 sugar beet companies for the construction of plants, each costing $7,000,000 or more, and each to be of a capacity requiring a production area of approximately 100,000 or more irrigable acres for profitable operation. Contracts for 1 of these 2 plants have been awarded. Other essential businesses and services, towns within the project area, church groups and individuals, have geared their plans and activities to the Bureau's planned rate of acreage development. Without the stability which has characterized the acreage program over the past few years, the successful integration of all these essential activities of many individuals and groups could not have been achieved. Its continuance depends upon maintaining the acreage program at the established rate.

The program for fiscal year 1953 includes for the first time substantial sums for contract work on "delayed or supplemental construction." These fund requirements are the natural consequence of the policies and construction procedures which have been followed in building project irrigation works. Under such procedures, in the interest of overall economy, irrigation facilities are not built to meet all eventualities. Where alternative designs are possible, in

many instances the most economical is chosen with the knowledge that in a number of cases actual testing or operation of the system may demonstrate the need for modification of the completed facility to meet operating requirements. Substantial economy is achieved through this approach although the requirement for sizable sums for supplemental construction must be expected during initial years of operation of the larger elements of system. If no additional requirements should arise it might be logically assumed that design and construction had been to standards uneconomically high. Specific supplemental construction, such as the blanketing of the second and third sections of the Potholes East Canal in fiscal year 1953 and the similar work on the fourth section of the West Canal now programed for fiscal year 1954, are expensive undertakings and ones which, in many instances, may not be specifically programed long in advance. They are, however, relatively minor compared to the expenditures which would be required to construct to standards which would entirely preclude such requirements.

The total estimated cost of the Columbia Basin project has been raised from $698,886,000 to $754,476,000 (anticipated total obligations, $757,050,000). The per-acre estimate for lateral construction was increased from $65 to $82 to reflect quantity revisions, as well as price rises. Price rises also served to increase the estimated cost of other uncompleted project facilities. Irrigation-facility estimates for engineering, location, layout, and design were raised on the basis of actual costs for recently completed irrigation facilities. Additional field data became available necessitating canal realinements and pumping-plant modifications with a resultant upward revision in the estimate. The cost of channel improvements and spillway-bucket repairs at Coulee Dam exceeded the most recent previous estimate and additional rock not contemplated previously was found to be required. Significant revisions which effected a reduction in the estimate include the deletion of the Coulee Dam permanent hospital, the elimination of canal lining on the lower reaches of the West Canal and the main Wahluke lateral, and a reduction in the estimated cost of the Esquatzel wasteway as a result of a change in size and alinement.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Grand Coulee Dam and Reservoir	$143,450,000	$139,119,850	$890,000	$818,000	$2,622,150
Other multipurpose plant facilities	26,000,000	17,589,238	405,000	460,000	7,545,762
Primary irrigation works	91,300,000	68,207,377	1,605,000	879,000	20,608,623
West Canal irrigation area	76,800,000	36,501,766	5,392,000	4,947,000	29,959,234
East Low Canal irrigation area	100,900,000	28,475,309	4,766,000	6,778,000	60,880,691
Potholes irrigation area	76,000,000	20,010,821	7,617,000	6,387,000	41,985,179
East High Canal irrigation area	98,100,000	3,058	10,000		98,086,942
Pasco and burbank pumping units	3,950,000	2,959,923	21,000		969,077
Project development	5,500,000	1,570,671	425,000	385,000	3,119,329
Other irrigation-plant facilities	4,050,000	841,223	315,000	423,000	2,470,777
Left power plant, structures and equipment	40,450,000	40,139,584	145,000	160,000	5,416
Right power plant, structures and equipment	49,450,000	48,700,981	481,000	220,000	48,019
Transforming and switching facilities	22,400,000	20,461,508	641,000	443,000	854,492
Settlement land purchase program	11,500,000	3,660,887	1,330,000	826,000	5,683,113
Part-time farm unit distribution system	1,800,000	110,068	88,000	16,000	1,585,932
Completed self-liquidating programs	2,826,000	2,826,028			−28
Total cost	754,476,000	431,178,292	24,131,000	22,742,000	276,424,708
Construction facilities		3,898,452	−85,000	−115,000	−3,698,452
Stores		2,547,790	−740,000	−450,000	−1,357,790
Project investigations		1,441,058	32,000	−150,000	−1,323,058
Transfers, credits, and other expenditures	2,574,000	1,487,184	−10,957	−97,000	1,194,773
Total expenditures	757,050,000	440,552,776	23,327,043	21,930,000	271,240,181
Unliquidated obligations, prior year		2,784,037	−2,784,037		
Total obligations	757,050,000	443,336,813	20,543,006	21,930,000	271,240,181
Method of financing:					
Allotment, fiscal year 1953			19,680,000		
Prior-year balance available			863,006		
Allotments required				21,930,000	271,240,200

Operation and Maintenance

Summarized financial data

Total, fiscal year 1952	$2,060,692
Allotment, fiscal year 1953	3,109,000
Total obligations, 1953	3,109,000
Allotment, fiscal year 1954	3,682,900
Total obligations, 1954	3,682,900

JUSTIFICATION OF ESTIMATE

Location

The Columbia Basin project is located in the central portion of the State of Washington, with its major feature, the Grand Coulee Dam, situated on the Columbia River approximately 95 miles west of Spokane, Wash. The area to be irrigated by the project lies generally to the south of the Grand Coulee Dam, extending to the vicinity of Pasco, Wash, near the confluence of the Columbia and Snake Rivers, and includes portions of Grant, Adams, Franklin, and Walla Walla Counties.

General conditions

Installations at the Grand Coulee Dam and power plant are now substantially complete for the presently authorized capacity of 1,974,000 kilowatts. Major irrigation facilities, which will ultimately provide water for approximately 1,029,000 acres of new land, have been under construction for a number of years. Initial irrigation commenced in fiscal year 1948 with the provision of water for the Pasco pumping unit supplied by supplemental pumping from the Columbia River. Initial irrigation from the primary works commenced in fiscal year 1952, when facilities for furnishing water to about 66,000 acres of irrigable land were completed. Facilities for additional acreages, averaging about 55,000 acres in each year, will be completed on a schedule looking to the irrigation of about 400,000 acres by 1958. Repayment contracts have been negotiated with each of the three irrigation districts established within the project area.

All power generated at Grand Coulee Dam, exclusive of power used for project construction and operation, is delivered at the switchyards at Grand Coulee Dam to the lines of the Bonneville Power Administration for transmission. Expense of operation, maintenance, and replacements for the dam, powerplant, and appurtenant works is financed by appropriations from commercial power revenues deposited for that purpose each year in the reclamation fund of the United States Treasury by the Bonneville Power Administration, marketing agent for Grand Coulee power, and from pumping power revenues paid by the water users. Expense of the irrigation system operations, maintenance, and replacements are financed by appropriations from the reclamation fund. Water rentals are collected currently from the water users, deposited in the Treasury and credited to the reclamation fund. Expense of operation and maintenance of the nonutility camp and service facilities at Coulee Dam is financed in part through application of quarters deductions from both construction and operation and maintenance personnel. Additional operating revenues received through cash collections from concessionaires are returned directly to the Treasury.

Work proposed, 1954

	Program 1954	Increase (+) or decrease (−) from 1953
MULTIPURPOSE FACILITIES		
Storage system..	$700,000	+$57,000
For continuation of the operation and maintenance of the Grand Coulee Dam and Reservoir, for financing the expense of a normal guard force, for financing the applicable portion of the project general expense and service facilities, and for continuation of hydrologic and river-control studies. The increase reflects a higher increment of general overhead and also provides for a higher and more normal level of maintenance.		

Work proposed, 1954—Continued

	Program 1954	Increase (+) or decrease (−) from 1953
Replacements and improvements	$345,000	+$210,000
Funds are provided for a reasonable replacement program for the Grand Coulee Dam and Reservoir and the appurtenant general property. The program also provides for an initial expenditure of funds for minor improvements utilizing Coulee Dam maintenance crews.		
Total obligations, multipurpose	1,045,000	+267,000
IRRIGATION FACILITIES		
Storage system	45,000	+20,000
For a full year's portion of the cost of operation and maintenance of Grand Coulee pumping plant and the equalizing reservoir chargeable to development period operation and maintenance. Acreages to be served will be increased by 56,000 acres in the spring of 1954. In addition, the program will cover operation and maintenance expense at the Pasco and Burbank pumping plants.		
Carriage system	30,000	+8,000
For a full year's portion of the operation and maintenance of the primary canals chargeable to development period operation and maintenance. Included are the Main Canal, the West Canal through and including the 3d section, the East Low Canal through and including the 3d section, and the Potholes East Canal through and including the 3d section. Acreage to be served will be increased by 56,000 acres in the spring of 1954.		
Distribution system	253,000	+167,000
For normal operation and maintenance of the Pasco and Burbank pumping unit distribution systems and for a full year's development period operation and maintenance on the laterals serving the 1st 66,000 acres irrigated from the primary irrigation works. In addition, the program provides for the initial development period operation and maintenance, during the spring of 1954, on the 2d block of 56,000 acres to be irrigated from the primary facilities.		
Drainage system	2,000	+2,000
For normal operation and maintenance of the irrigation drainage system.		
Replacements and improvements	125,000	+109,000
Funds are provided for a reasonable replacement program on the irrigation system. In addition, improvement funds are provided to cover that portion of the cost of operation and maintenance of the Grand Coulee pumping plant and equalizing reservoir chargeable to testing period operations and these are capitalized.		
Total obligations, irrigation	455,000	+306,000
POWER FACILITIES		
Electric generation	1,205,900	−54,100
For continuation of operation and maintenance of the Grand Coulee powerplants and appurtenant works and for financing the applicable portion of project general expense and service facilities. The decrease results from minor reduction in maintenance and a cut in the allocated portion of additions to the stock of operation and maintenance materials, and small tools.		
Transmission and distribution expense	385,000	+25,000
For continuation of normal operation and maintenance of transforming and switching facilities at Coulee Dam. Increase reflects slightly higher cost for both operation and maintenance and a higher increment of general project overhead.		
Replacements and improvements	165,000	+110,000
The program provides for a minor increase in normal replacements; for financing minor capitalized improvements performed by the Coulee Dam maintenance crews; and for an additional allocated portion of stocks of supplies, materials, and small tools.		
Subtotal, power	1,755,900	+80,900
Nonutility operation and maintenance	427,000	−80,000
For funds necessary to provide for financing the operating deficit of the town and service facilities at Coulee Dam and to offset the portion of the cash collections expected to be included in the nonutility operating revenue and deposited in the reclamation fund during 1954. Operation of the Coulee Dam hospital by Bureau forces will be discontinued about Jan. 1, 1953, which is the principal cause of the decrease. Reductions are also planned in other nonutility operations, but these will be largely offset by a decrease in revenues.		
Total obligations:		
Power	2,182,900	+900
All facilities	3,682,900	+573,900

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
MULTIPURPOSE FACILITIES			
Operation and maintenance: Storage system	$763,983	$643,000	$700,000
Replacements and improvements	6,768	135,000	345,000
Total obligations, multipurpose facilities	770,751	778,000	1,045,000
IRRIGATION FACILITIES			
Operation and maintenance:			
Storage system	6,268	25,000	45,000
Carriage system		22,000	30,000
Distribution system	24,195	86,000	253,000
Drainage system			2,000
Replacements and improvements		16,000	125,000
Total obligations, irrigation	30,463	149,000	455,000
POWER FACILITIES			
Operation and maintenance:			
Electric generation	730,961	1,260,000	1,205,900
Transmission and distribution expense	246,278	360,000	385,000
Replacements and improvements	1,188	55,000	165,000
Subtotal, power	978,427	1,675,000	1,755,900
Nonutility operation and maintenance	281,051	507,000	427,000
Total obligations, power	1,259,478	2,182,000	2,182,900
Total obligations, all facilities	2,060,692	3,109,000	3,682,900
Allocation:			
Irrigation	30,463	149,000	455,000
Power	2,025,229	2,955,000	3,222,900
Flood control	5,000	5,000	5,000
Total obligations	2,060,692	3,109,000	3,682,900
Method of financing:			
Allotment	2,386,600	3,109,000	
Unobligated balance	−325,908		
Allotment required			3,682,900

Project statistics

Feature or item	Unit	Actual, fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
Irrigation system:				
Irrigable area: Full irrigation	Acres	72,672	131,130	186,798
Cultivated area (total) [1]	do	5,335	18,300	54,000
Gross crop value	Dollars	$738,824	$1,830,000	$5,400,000
Average gross crop value per cultivated acre	do	$138	$100	$100
Storage dams and reservoirs [2]	Number	4	4	4
Pumping plants [3]	do	32	48	69
Transmission lines	Miles	16	19	19
Substations	Number	7	13	14
Substation capacity	Kilovolt-amperes	14,600	27,700	28,700
Canals [4]	Miles	153	180	243
Laterals	do	345	634	891
Drains	do	25	25	25
Operating roads	do	481	725	995
Power system:				
Annual sales	Kilowatt-hours	14,422,694,500	14,500,000,000	14,500,000,000
Total power revenues [5]	Dollars	$11,100,000	$11,100,000	$11,100,000
Powerplants	Number	2	2	2
Plant capacity	Kilowatts	1,974,000	1,974,000	1,974,000
Substations	Number	3	3	3
Substations capacity	Kilovolt-amperes	2,165,000	2,165,000	2,165,000

[1] Totals for cultivated areas reflect Jan. 1 totals for the year indicated.
[2] Grand Coulee Dam is included in the above totals although it is used jointly in the power and irrigation facility operations of the Columbia Basin project. Long Lake Dam, which was completed in fiscal year 1949, serves primarily a transmission and regulating function and is therefore not included in these totals.
[3] Pumping plants are included in the totals for the year in which the plants are completed and available for testing purposes.
[4] Totals for this item include miles of completed canals and major wasteways. Full operation of the canal system will start in fiscal year 1953 although the canals were operated for testing purposes in fiscal year 1952.
[5] There is no fixed rate for Coulee Dam Power. Bonneville Power Administration annually deposits in the Treasury funds to cover operation and maintenance, interest, replacements, and certain investment costs in accordance with the memorandum of understanding between Bonneville Power Administration and the Bureau of Reclamation

Mr. JENSEN. You are asking for $21,930,000 for the fiscal year 1954.
Now, tell us a little bit about the third powerhouse at Grand Coulee.
Mr. LINEWEAVER. All right, Mr. McPhail.
Mr. MCPHAIL. I have a statement for the record, Mr. Chairman.
Mr. JENSEN. Just put that in the record.
Mr. MCPHAIL. Yes, sir.
(The matter refered to is as follows:)

CONSTRUCTION AND REHABILITATION

INVESTIGATIONS OF THIRD POWERPLANT AT GRAND COULEE DAM

Investigations were initiated in January 1952 to determine the feasibility of the construction and operation of a third powerplant at Grand Coulee Dam and have been under way since that time. These have included geologic investigations to determine possible locations for a third powerplant; preliminary and feasibility designs and estimates to determine the construction problems involved in the construction of such a plant and the cost of such construction; system power studies to determine the water available for use in an additional plant and the power that could be produced at such development; and hydraulic model studies to determine the effect of such additional plant operation on the critical tailwater situation already existing below the Grand Coulee Dam.

A check of the geological and physical limitations at Grand Coulee Dam indicate two possible locations for a third powerplant in the vicinity of the dam. A left, or west bank, location would place the plant just downstream from the river bridge below the Coulee pumping plant. The alternate location was on the right, or east bank, and would place the powerplant just downstream from the existing right powerplant. A preliminary reconnaissance clearly indicated that the alternate, or right bank, site was best suited for such development. Rough reconnaissance estimates also indicated a much higher cost for development of the location on the left bank. Consequently the location on the left or west

bank was dropped from further consideration and the investigations have been concentrated on the location on the right or east bank.

From a geological and physical standpoint, it is possible to construct a third powerplant on the right bank of the Columbia River immediately downstream from the existing right powerplant which would have intake tunnels through the right abutment and intake structures a short distance upstream from the right end of Grand Coulee Dam.

Power system studies made (by October 1952) indicate a capacity requirement in the power system in the near future of four units the same size as those currently installed in the Grand Coulee powerplants (108,000 kilowatts each), and a requirement for four additional units as additional storage is developed in the foreseeable future beyond that which is now under construction or authorized. The chief engineer was requested to prepare cost estimates to show the cost of placing four units into early operation with provision for adding four units at an indefinite future time. Physical limitations of the site indicate that the maximum installation possible would be a total of 10 similar units; therefore, the chief engineer was also requested to furnish comparative estimates for a complete 10-unit plant at this site and these estimates are in progress.

The geological conditions are suitable at the site to permit the construction of an underground powerplant and approximate cost estimates favor this type construction. The feasibility estimates are proceeding on the basis of such an underground structure. The principal advantages to be gained by such construction will be the elimination of the necessity for relocating the main right bank switchyard at an estimated cost of about $5 million, and such value as might be placed upon plant security gained by such underground construction.

A problem arises in the design studies in connection with erosion in the channel immediately below the Grand Coulee Dam. The problem of determining the downstream channel erosion which would be incident to use of the outlets for flood control and the important question of the effect that the discharge from such a third powerplant would have on these critical conditions is under study. The Chief Engineer's Hydraulic Laboratory in Denver, Colo., rehabilitated the 1-to-60 scale model of Grand Coulee and ran further tests on use of outlets both with existing plants only and with the addition of a third powerplant. The report on these model studies is still under preparation but preliminary information on the results of the studies indicates that the flow from the third powerplant when combined with flow over the Grand Coulee spillway would cause a fast clockwise eddy to form immediately below the tailrace of all three powerplants, as well as below the spillway. The effects of this eddy have not been carefully analyzed, but it is anticipated that they will result in decreased power output from all three plants.

The complexity of designs involved and the magnitude of the feasibility estimates required have delayed the completion of the estimates by the Chief Engineer's office so that they will not be available before April 1953.

Power-operation studies indicate that little or no increase in prime power production can be expected from development of a third powerplant, even though all the prospective storage sites in the United States and a considerable part of those in Canada be developed, since the existing plants can utilize the regulated flows through the critical storage drawdown periods. These power studies included a coordinated operation of all of the existing and authorized plants in the Columbia River system and all of those proposed by the Corps of Engineers in House Document 531, 81st Congress, 2d session, except for Glacier View which is controversial and so was omitted.

If each of these plants was developed to a capacity adequate to utilize the regulated flows throughout the critical streamflow period, as of August 1936 to April 1937, about 252,000 kilowatts of additional peaking capacity would be required at a 75-percent load factor. This peaking capacity could be developed at a third powerplant at Grand Coulee or by addition of units at several of the downstream plants which have been designed for such additions. Although feasibility estimates are not yet completed, rough preliminary estimates of cost for a third powerplant indicate that the cost of such a plant would far exceed the benefits to be derived from the peaking capacity. Furthermore, if the peaking power requirements are evaluated on the basis of cheapest alternative source, the cost of additional units in downstream plants would set the value.

Other coordinated power-operation studies show that when a sufficient amount of additional storage capacity has been developed upstream from Grand Coulee to permit annual release of 10 million acre-feet of storage in excess of the storage regulations, provided as proposed in the aforementioned report of the Corps of

Engineers, a very small amount of additional prime power could be generated by a third powerplant at Grand Coulee. This would amount to only about 25,000 kilowatts or less than 25 percent of one unit's capacity and would, therefore, be relatively inconsequential in a plant of 400,000- to 800,000-kilowatt capacity. If downstream plants were developed with capacities only adequate to utilize the regulated releases throughout the critical period (which in this case would be the 32-month period, August 1929–March 1932, inclusive), there would be a need for some 829,000 kilowatts of additional capacity to provide peaking at 67 percent. This capacity could be developed in a third powerplant at Grand Coulee at which site it would be in a position to generate some 46 billion kilowatt-hours of secondary or dump energy during a 20-year period similar to 1929–48 if 8 units of the capacity now in use at Grand Coulee were installed. Inasmuch as this secondary energy can be produced during only about 50 percent of the time and none at all would be available through 32 consecutive months of the critical period, it would have relatively little value until such time that the power-system development has progressed to the point where steam-electric power is available in sufficient quantity to permit the use of the secondary hydro energy for fuel replacement.

It is expected that hydro-power development in the Northwest will not reach the stage where steam-electric costs will be the measure of new power value for some years to come. But when and if it does, the development of steam-electric capacity will proceed until it would be possible to use Grand Coulee secondary energy for fuel replacement. The value of this energy, in combination with the value of capacity according to methods now being proposed by the Federal Power Commission, would provide benefits about 1½ the costs for a plant of from 4 to 10 units total capacity according to the rough estimates now available. Thus, it would appear that a third powerplant would be economically justified at that time.

Mr. JENSEN. Is there a permanent solution for the bank-stabilization problem at Grand Coulee?

Mr. LINEWEAVER. I would like to tell you briefly about that, Mr. Chairman, and then file a more complete statement for the record. As to that situation down about Koontzville and other areas downstream from Coulee Dam, the banks have been sloughing, and some of the houses and other property have been endangered. We have had intensive surveys made this spring, largely in cooperation with the Corps of Engineers, and 2 weeks ago a conference was held at Coulee Dam with the residents of the area and the representatives of the Corps of Engineers. The plan that is now worked out is for the corps, in connection with Chief Joseph Dam and Reservoir right-of-way, to purchase the land and property that is in jeopardy there, since it may be flooded out, and the corps will buy off their land for Chief Joseph Reservoir area.

Mr. JENSEN. How much is in the budget for this work?

Mr. LINEWEAVER. Under this plan I do not think that there will be anything in the budget for that particular work by the Bureau of Reclamation, because if this plan works out, which I understand from the district manager and the corps that, under the program, no Bureau funds will be necessary.

Mr. JENSEN. All right.

Mr. LINEWEAVER. In addition to that there is bank stabilization at Coulee Dam itself for which there is an item in the budget. The fiscal year 1953 program item "Grand Coulee Dam and Reservoir" includes $350,000 for continuation of the riverbank-stabilization work immediately downstream from the dam that has been in progress since the flood of 1948 caused extensive erosion damage. The work this fiscal year consists of a drilling program on the riverbanks to allow water

trapped in the claybanks to drain into the underlying gravel and on into the river; and the placement of additional armor rock and riprap on the downstream banks.

The fiscal year 1954 program includes $300,000 for this stabilization work. The armor-rock and riprap contracts will be completed, as will the drilling program. A portion of the funds are for grouting and consolidating riprap and armor rock now in place. This work may be rather extensive in the future, but the extent of the requirement and the timing will not be determined until the protective work already done has been tested by river flows exceeding 600,000 second-feet; such flows occur very infrequently.

Mr. JENSEN. And you will take what is necessary to do this work out of that fund?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. All right, thank you.

It is understood that you absorbed the personnel reductions in 1952 and 1953 by contracting for the installation of pumps at Grand Coulee rather than doing the work yourselves by force-account labor.

Mr. MARKWELL. I think that is correct, sir.

Mr. JENSEN. Was that proper?

Mr. MARKWELL. I would say that it was successful. There are two schools of thought on it. One of them is that our own people should make the installations of these large complicated pieces of machinery, such as generators and pumps, so that they might become fairly familiar with the installation and later become operators.

The other theory is that we should do this by contract, and, since it is possible to do that work by contract, we have so done it.

Mr. JENSEN. Where did you get the money to pay for this contract?

Mr. MARKWELL. Sir?

Mr. JENSEN. Out of what item did you take the money to pay for this contract?

Mr. MARKWELL. For installing the pumps?

Mr. JENSEN. Yes. There was not any item in the 1953 budget specifically for this purpose.

Mr. MARKWELL. Mr. Chairman, I would have to refresh my memory on that.

Mr. JENSEN. Would you do that and insert the answer to that question in the record?

Mr. MARKWELL. Very well, sir.

(The matter referred to follows:)

SOURCE OF FUNDS PROGRAMED, FISCAL YEAR 1954, FOR INSTALLATION OF PUMPS ON COLUMBIA RIVER PROJECT

An appropriation item of $1,370,000 was scheduled for fiscal year 1953 in the budget justification opposite the heading, "Primary irrigation works" under "Irrigation facilities" of the control schedule for the Columbia Basin project. The justification stated that work proposed in fiscal year 1953 included "completion work on the Grand Coulee pumping plant * * *." Part of this work consisted of the installation of pumps 5 and 6, pump controls, and miscellaneous associated equipment. It was estimated that $300,000 would be required for the installation and this amount was included in the appropriation item of $1,370,000 mentioned.

Mr. Chairman, I will offer this statement on the Columbia Basin for the record.

Mr. JENSEN. Yes.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

On the Columbia Basin project the 1954 program, requiring an allotment of $21,930,000, involves the continuation of work in progress at the end of the current fiscal year and commencement of only such additional construction work as is essential to the accomplishment of immediate program goals. With the virtual completion of power facility construction at Grand Coulee Dam in 1951, as well as most of the primary irrigation works which deliver water from the reservoir behind Grand Coulee Dam to the north end of the irrigation area, the annual fund requirement on this project for the past 2 years has been considerably less than previously. A further leveling off after fiscal year 1954 is in prospect as the principal project canals approach completion so that the development of additional lands will require only the construction of distribution systems.

The presently authorized power-construction program requires in fiscal year 1954 only relatively minor amounts for completion items in the powerplants and switchyards.

The funds requested for irrigation development will provide for another year's requirement to sustain essentially the same program we have been presenting for several years. Under that program, facilities were completed for the irrigation of 66,000 acres in 1952.

Facilities are being made ready for an additional 58,000 acres in 1953 and the program calls for about 55,000 acres each year thereafter through 1959. With the huge investment already made in the Grand Coulee pumping plant and other primary irrigation works which had to be built before the first water could be delivered to the land, the project is definitely in the payoff stage now when large yearly increments of additional land can be brought into production with relatively small additional expenditure.

In fiscal year 1954 canals, laterals, and related works required to serve areas to be irrigated in 1954 will be completed, and contracts will be under way or commencing on facilities to serve acreages scheduled for development in 1955 and 1956. The major portion of the funds requested for the Columbia Basin project are for this construction work. On a project of this scale construction must be in progress in a particular area 2 years and more before water is actually delivered.

Settlement and farm development of the acreages to which water was delivered in 1952 have proceeded at about the rate anticipated. The percentages of lands planted to crops within each farm unit has exceeded expectations, with an average of 78 percent of each farm unit, to which water is being furnished, having been planted to crops in the summer of 1952. This compares with a predicted 50-percent development. This rapid rate of development as compared to the 50-percent development of 50 percent of the farms historically considered as excellent progress for the first year is due, at least in part, to the assistance furnished to settlers by the assistant county agents working under the auspices of the Washington State Agricultural Extension Service in cooperation with the Bureau of Reclamation. Another important factor has been the favorable concentration of heavy land-leveling equipment.

During fiscal year 1954, in addition to the construction of canals and laterals, construction will continue on operating headquarters, and ditch-riders and pump-operator houses in isolated areas. Necessary operating equipment and temporary construction facilities will be provided. The settlement land purchase and project-development programs will continue and will include planning new towns. This development activity will include the completion of two exploratory wells and the drilling of a third well in connection with investigations to determine the necessity for and feasibilty of supplying water from project irrigation works to communities in the Columbia Basin. An additional advance of funds will be made to the State College of Washington under the continuing program of cooperative technical settler assistance in the field of irrigation agriculture.

The irrigation program will include the usual priming, puddling, and testing, and necessary deferred or supplemental construction on completed works, such as the placing of earth-blanketing material on unlined canal sections where the first year or two of operation have disclosed a need for such treatment to reduce seepage.

A program of improvements to the Columbia River Channel immediately downstream from Coulee Dam has been in progress since 1949 following the 1948 Columbia River flood which caused major damage to erosion of river banks and displacement of previously placed riprap protection. The work has consisted primarily of river-bank resloping, riprap replacement, and placing of a layer of large rocks referred to as armor rock. A drilling program has also been under way to provide a method for allowing water trapped in the clay banks of the right switchyard to drain into underlying gravel deposits and on into the river, as an economical means of bank stabilization. In fiscal year 1954 the armor rock and ripray contracts will be completed, as will the drilling program. A modest sum has been included for grouting and consolidating riprap and armor rock now in place. The extent and timing of the grouting program will depend to a large extent on future river action.

Structural and equipment modifications are being made within the dam, pumping plant, and powerhouses to accomplish the isolation of these features from one another to prevent or localize a recurrence of a stoppage of power production which occurred in March 1952 when a flooding of galleries within the dam resulted in water escaping to the powerhouses and forcing the shutdown of several generators. These alterations and modifications will be approaching completion by the end of fiscal year 1954.

Miscellaneous items of a general nature at Coulee Dam in the 1954 program include completion of the construction of a guard and fire headquarters, slope stabilization and ground cover to prevent wind and weather erosion, and thoroughfare lighting.

Mr. JENSEN. How much money is in the budget for the so-called homestead assistance program?

Mr. LINEWEAVER. Approximately $100,000.

Mr. JENSEN. $100,000?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. There is more money than that, is there not?

Mr. LINEWEAVER. That is for that particular item. For the project development work, the total is about $385,000.

Mr. JENSEN. How much did you transfer to the Department of Agriculture?

Mr. LINEWEAVER. None out of that fund.

Mr. JENSEN. None out of that fund?

Mr. LINEWEAVER. No, sir; none out of that fund. There is a contract, or an agreement with Washington State College for assistance which runs somewhere about $60,000 annually for the 3-year period.

Mr. JENSEN. Why is this program necessary?

Mr. LINEWEAVER. I can very well state it briefly, Mr. Chairman. We have undertaken this settler assistance program on the Columbia Basin project ever since water was first available.

Mr. JENSEN. Do you have a statement on that?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. Do you have it here?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. All right, insert the statement for the record.

Mr. LINEWEAVER. Yes, sir.

(The matter referred to follows:)

SETTLEMENT PROGRAM, COLUMBIA BASIN PROJECT

By 1952 facilities were completed on the Columbia Basin project for the irrigation of 66,000 acres of land. Facilities are being constructed for 58,000 acres in 1953 and the program calls for about 55,000 acres each year thereafter through 1959. While most of the land served by these facilities is privately owned a considerable acreage is owned by the Government and is made available to settlement by veterans.

Prior to 1953, 194 full-time and 109 part-time farm units comprising 15,102 irrigable acres of land were made available for settlement. During 1953, 140 full-time and 52 part-time farm units comprising 11,000 acres will be made available for sale to settlers. The schedule for 1954 provides for the settlement of 100 full-time farm units comprising 8,050 irrigable acres of land. Because most of the land comprising these units was purchased for settlement purposes, the farm units are sold at their appraised dry-land value rather than homesteaded as is the case with public-domain land. Veterans are given preference. The demand for these farm units has been great. For the units made available for settlement in 1952 an average of 113 applications were received for each farm unit. Applications received in 1953 to date indicate an equally heavy demand.

The new settlers on the Columbia Basin project as well as the owners of private land have been making more rapid progress in bringing their land under cultivation than was anticipated. It was anticipated that 50 percent of the farms for which water was made available would have approximately 50 percent of their irrigable land developed by the end of the first full crop year. Records show that in the Pasco area 78 percent of the land was developed by the summer of 1952. This excellent rate of land development has been largely due to the settler assistance program which has been put into effect on the project. Through provisions of a memorandum of understanding between the Bureau and the Washington State College the services of several assistant county agents have been made available to provide assistance in land clearing and leveling, the layout of the farm distribution system, the selection of crops, the institution of proper irrigation practices, proper fertilization, and the many other like problems faced by new irrigation farmers. The Soil Conservation Service also is providing assistance to settlers.

One phase of the settlement program is the establishment of development farms, four of which are now in operation on the project. These farms are established to demonstrate to new irrigation farmers proper irrigation methods and practices. A part of each farm is devoted to experimental work conducted by the Washington State College, the Bureau of Plant Industry, and the Soil Conservation Service to obtain research information to meet specific problems faced by new irrigation farmers.

The Bureau of Reclamation, the Washington State College, and the Soil Conservation Service are jointly assisting settlers with their domestic water problems. Under an agreement between the three agencies the Bureau formulates a domestic water plan for each irrigation block. In many cases these plans provide for community water systems whereby several farms are served by one well. The Extension Service takes the leadership in discussing the plans with the farmers concerned while the Farmers' Home Administration assists through supplying credit for the construction of the domestic water systems. This service has been very valuable to the settlers.

Mr. JENSEN. What percentage of the farm leveling and farm unit layout work in the Columbia Basin has been done by the Soil Conservation Service, and why can they not do all of that work?

Mr. LINEWEAVER. The point there is that the Soil Conservation Service has not had sufficient funds to do all of the work necessary.

Mr. JENSEN. Do you have a statement on that?

Mr. LINEWEAVER. No, sir.

Mr. JENSEN. All right; proceed.

Mr. LINEWEAVER. Our operations there have been with the Washington State College of Agriculture as the coordinating unit for all Department of Agriculture activities. We have done that because we consider that more economical and more efficient than having to deal with 3 or 4 independent units of the Department of Agriculture.

That program of cooperation was inaugurated some 8 or 10 years ago, and it has been carried on through the years, and we think it has worked successfully, and more economically and efficiently than if we had to deal with 3 or 4 agencies.

Mr. JENSEN. Well, of course, that is the trouble with the overall picture. We have so many separate agencies dealing with the soil

conservation of our land. I hope that we can finally give full responsibility for our soil and moisture program to the Soil Conservation Service which is best qualified to do that work, and when we do that we will really start to get going on the conservation of our soil on the public domain, and on irrigation projects as well as on our private lands.

We cannot get it done this year in this budget, I know that, but I hope we all work to that end.

It appears that water has been contracted for for less than half of the units which will be ready for operation in 1954. If this is the case why cannot this irrigation construction program be slowed down?

Mr. LINEWEAVER. I would like to say just a few words on that, Mr. Chairman, and then file a more complete statement for the record.

Mr. JENSEN. All right.

Mr. LINEWEAVER. The history of irrigation developments is that it takes time for the settlers to get their land in shape to operate effectively and efficiently under irrigation.

We feel that the record of the Columbia Basin will show that more land is under irrigation quicker, or sooner after water is delivered, than there has been on most of the other irrigation developments in the West.

We realize that the picture as shown by the figures indicates slow progress. However, you take on the Pasco unit, which was the first unit of the Columbia Basin project to get under irrigation, the total area there actually under irrigation is along about 80 percent. Furthermore, development work is underway on approximately 95 percent of the farm units in this area.

Although they have not had the water as long as many other projects have had, those Pasco settlers have put more land under actual irrigation sooner than on any other project that I know of, and I think the history and the records will bear me out on that.

Mr. JENSEN. Then you think contracts will be made which will justify the appropriation which you request for that purpose next year?

Mr. LINEWEAVER. Yes, sir.

Now, may I add this, the contracts are already executed with the three irrigation districts of the Columbia Basin project. The individual settlers take their water as rapidly as they can get their land into production, or ready for irrigation.

Now, we have had some difficulties, or obstacles, rather, in financing, or seeing that the settlers were financed for land leveling, for homes, for domestic water, and things of that kind.

Within the last month or so we have had conferences with the Farmers Home Administration, and Mr. Lassiter, the head of the Farmers Home Administration sent a special representative out to the Columbia Basin area to cooperate with our people and see if they cannot straighten out some of the obstacles that were delaying financial credit for these new settlers, all of whom are veterans.

Our reports are that this special representatives advised Mr. Lassiter that there should be better methods to provide credit quicker than had been the practice hertofore.

For instance, reports had come in that in the Columbia Basin irrigation area, particularly the south district, it was taking 6 months or

more after a settler made application for a loan for him to actually get the money.

That seemed to the settlers and to the district to be an unconscionably long time.

We understand that the Farmers Home Administration is trying too shorten that time. If that is achieved, then the finances will be available to the settlers quicker, and we will get more land under irrigation sooner by that cooperative method.

(The following additional information furnished for the record:)

RATE OF IRRIGATION DEVELOPMENT, COLUMBIA BASIN PROJECT

The rate of irrigation development on the Columbia Basin project has been more rapid than was anticipated. While the Bureau has no authority to require development of land in private ownership it has set a minimum rate of development for farm units which are purchased from the Government. According to this schedule a new settler who purchases an 85-acre Government land farm unit must develop 40 percent of his land by the end of the second year, 60 percent by the end of the third year, and 65 percent by the end of the fourth year. It is also the policy of the Bureau to require payment of the minimum charges for water service beginning the first year of the development period. These incentives to rapid development have been effective. However, the basic force back of rapid land development is the strong desire on the part of the landowners to establish their homes and bring their lands into full production. The rate of development actually experienced on the project for both privately owned land and land purchased from the Government has been more rapid than this schedule as shown by the following data:

Irrigation development to September 1952

Irrigation block	Year water available	Total number of units	Total irrigable acreage	Units using water	Irrigable acreage of units using water	Acreage cultivated
1	1948	82	5,442	77	5,110	4,610
2	1950	19	1,063	17	950	690
40	1951	177	14,654	60	4,780	4,490
41	1951	161	11,700	95	6,930	6,830
70	1952	121	5,993	48	2,420	2,440
71	1952	145	12,233	52	4,300	4,200
72	1952	299	19,952	152	9,980	8,380

It will be noted that in block 1 where water has been available for 4 years 85 percent of the irrigable acreage has been cleared and leveled and was in cultivation. A surprisingly large percentage of the areas which received water in the spring of 1952 was in cultivation by September. The clearing and leveling of land and the layout and construction of the farm distribution system is an enormous task and requires considerable time especially when it is considered that this must be carried on along with the acquiring of farm equipment and the construction of houses and farm buildings.

This rapid progress in land development can also be attributed to the settler-assistance program which is now in effect. The Washington State College, the Soil Conservation Service, and the Bureau have collaborated in preparing uniform recommendations which have been made available to the new settlers as well as the resident landowners. The three agencies are cooperating closely and there is no duplication of effort. The Soil Conservation Service has a group of competent technicians who are participating in this program and are working side by side with the Extension Service and the Bureau. However, due to the increased acreage which is being supplied with water there must be a corresponding increase in the technical-assistance program. We believe that the program which has been formulated is sound and will be effective. The cost of the technical-assistance program is insignificant when compared to either the benefits or the total project costs. The program has the full support of the joint boards of the three Columbia Basin irrigation districts.

Decreasing the rate of construction of canal and lateral systems would sharply reduce the number of farm units which could be served with water each year. This would not increase the rate at which a particular settler could develop the land on his farm unit.

A much better yardstick for measuring the need for development is the demand for Government-owned farm units as they become available. These farm units on the Columbia Basin project are sold to qualified settlers, not given away as homesteads. Our records show that when each block of farm units is ready for disposal, applications exceed the number of units available in a ratio of about 70 to 1. For units sold in 1952 the ratio was 113 to 1.

A great deal of study preceded the decision that a rate of approximately 60,000 acres per year was a reasonable rate of development on the Columbia Basin project. The many related problems, particularly the need for facilities such as roads, domestic water, schools, marketing centers, and credit facilities, were fully considered. It is true that these requirements place serious problems before local communities and other governmental agencies but it was decided that the development rate selected was the optimum, and a reasonable rate. The progress that has been made in working out these problems in advance of actual land settlement has been remarkable and there is reason to believe that settlers will have the benefit of unusually good services and facilities by the time they are needed.

One important consideration in establishing the rate of development was the tremendous investment that has been made over the past 18 years in the primary facilities required for the irrigation of the Columbia Basin. By June 30, 1952, shortly after the first major block of land received its first water, the cost of Grand Coulee Dam and related multipurpose facilities in that area, together with the primary irrigation works (including the Grand Coulee pumping plant, equalizing reservoir, and the main canal system) approximated $300 million. The realization of the returns on this huge investment requires only the construction of the relatively few remaining large canal sections and the lateral distribution systems and related facilities. Thus, relatively small annual increments of expenditure for this construction from this time forward bring large areas of new land into production. Moreover, an initial development of several hundred thousand acres is necessary for efficient self-supporting operation of the very extensive works that have been provided to deliver water to the Columbia Basin lands.

OPERATION AND MAINTENANCE

Mr. JENSEN. All right, put a statement on the operation and maintenance request in the record.

Mr. LINEWEAVER. We have one on irrigation and power both. I will put the one on irrigation in the record and let Mr. McPhail put the one on power in the record.

(The statement referred to by Mr. Lineweaver is as follows:)

IRRIGATION OPERATION AND MAINTENANCE

The Columbia Basin project is located in the central portion of the State of Washington with its major feature, the Grand Coulee Dam, situated on the Columbia River approximately 95 miles west of Spokane, Wash. The area to be irrigated by the project lies generally to the south of the Grand Coulee Dam extending to the vicinity of Pasco, Wash., near the confluence of the Columbia and Snake Rivers, and includes portions of Grant, Adams, Franklin, and Walla Walla Counties.

Major irrigation facilities, which will ultimately provide water for approximately 1,029,000 acres of new land, have been under construction for a number of years. Initial irrigation commenced in fiscal year 1948 with the provision of water for the Pasco pumping unit supplied by supplemental pumping from the Columbia River. Initial irrigation from the primary works commenced in fiscal year 1952 when facilities for furnishing water to about 66,000 acres of irrigable land were completed. Facilities for additional acreages, averaging about 55,000 acres in each year, will be completed on a schedule looking to the irrigation of about 400,000 acres by 1958. Repayment contracts have been negotiated with each of the three irrigation districts established within the project area.

Expense of the irrigation system operations, maintenance, and replacements are financed by appropriations from the reclamation fund. Water rentals are

collected currently from the water users, deposited in the Treasury and credited to the reclamation fund. Expense of operation and maintenance of the nonutility camp and service facilities at Coulee Dam is financed in part through application of quarters deductions from both construction and operation and maintenance personnel. Additional operating revenues received through cash collections from concessionaires are returned directly to the Treasury.

A total of $445,000 is being requested for operation and maintenance of irrigation features of the project during fiscal year 1954, an increase of $306,000 over the funds available this year. The increase is required because of the completion of additional project facilities and the water service being provided to additional acreages. A nonreimbursable appropriation of $5,000 is requested to cover that portion of the multipurpose operation and maintenance costs of the project determined to be applicable to flood control.

Mr. McPHAIL. I offer this statement on operation and maintenance for the record, Mr. Chairman.

Mr. JENSEN. Yes.

(The matter referred to is as follows:)

OPERATION AND MAINTENANCE

A general description of this project is contained in the construction statement previously furnished this committee.

Of the total funds being requested in fiscal year 1954 for the operation and maintenance of the Columbia Basin project, an allotment of $2,182,900 is required for the normal operation and maintenance of the electrical features plus $1,040,000 for that portion of the multipurpose features that are charged to power, making a total of $3,222,900 chargeable to power.

The Grand Coulee powerplant and switchyards, with an installed generating capacity of 1,974,000 kilowatts, comprise the electrical features of the Columbia Basin project.

There is an increase of $267,900 requested in the fiscal year 1954 allotment over the fiscal year 1953 allotment, due primarily to an increase in replacement and improvement items, which work is required for continuous and safe operation of the project.

Mr. KIRWAN. I have visited most of the projects under reclamation, and all I want to say is that if you are doing the same good work that you have been doing every year in my 10 years on this committee you are doing a good job.

Mr. LINEWEAVER. Thank you, sir.

Mr. KIRWAN. That is all.

Mr. LINEWEAVER. We are not perfect yet, Mr. Kirwan.

Mr. KIRWAN. No, none of us are.

Mr. LINEWEAVER. But we are striving to improve wherever we can find these kinks.

Mr. FENTON. It is pretty expensive acreage at $523 an acre.

Mr. LINEWEAVER. Yes, sir, it is an expensive operation, but under the program here, although the settlers are required to repay $85 an acre, the remainder is financed out of power revenues from Coulee Dam incidentally, the Bureau would not have had power at Coulee Dam had it not been for the irrigation program contemplated in the Columbia Basin.

CONSTRUCTION AND REHABILITATION

YAKIMA PROJECT, KENNEWICK DIVISION, WASHINGTON

Mr. JENSEN. Now we turn to the Yakima project, Kennewick division, Washington, and we will insert in the record at this point pages 68, 69, and 70 of the special data and summary sheets which have been

furnished to the committee by the Bureau and pages 429 through 433 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$317,896	$1,367,000	$4,000,000
Unliquidated obligations	210	133,000	
Total obligations	318,106	1,500,000	4,000,000

HISTORY OF PROJECT DEVELOPMENT

Location

In south central Washington in Benton County above the confluence of the Yakima and Columbia Rivers.

Purpose

To provide irrigation to undeveloped and inadequately supplied lands and to provide power for pumping and commercial use and fish and wildlife benefits.

Authorization

This division of the Yakima project was authorized by act of June 12, 1948 (62 Stat. 382).

Initial date

Planning, 1903.
Advanced Planning, 1948.
Construction of the present extension started in fiscal year 1953.
Date of functional completion of construction, fiscal year 1956.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1953, $1,500,000.

COSTS

Original estimated cost	$10,736,000
Allocation of cost unallocated	10,736,000
Present estimated cost	12,932,100
Allocation of cost:	
Irrigation	8,567,300
Power	3,992,200
Fish and Wildlife	1,004,500
Unallocated (decreased)	631,900

REPAYMENT

Status of repayment contract negotiations. Repayment contract has been voted favorably by water users and will be executed shortly.

Amount to be repaid and repayment period

	Amount	Repayment period		Total years
		Regular	Development	
Irrigation	$5,115,000	1957 to 2022	(1)	66
Power	7,444,500	19— to 19—		(2)

[1] No development period for old lands; 10 year development period for new lands is included in overall 66-year period.
[2] Commercial power investment repaid in 47 years (2002) and irrigation costs repayable by power in 66 years.

Repayment of costs allocated to irrigation

Water users	$5,115,000
Power:	
Direct	2,935,674
Interest component	516,626
	3,452,300
Total	8,567,300

Repayment costs per acre

Federal investment per acre	$454.00
From irrigators	271.00
From private revenue	183.00
Annual water-user charges:	
Construction	4.10
Operation and maintenance	5.15
Total	9.25

Gross crop income per acre resulting from project irrigation (estimated for mature stage of development), $183.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full				14,534
Supplemental				4,337
Total				18,871
Power (kilowatts)				12,000
Power rates (mills per kilowatt-hour)				[1]

[1] It is anticipated that commercial power will be marketed by the Bonneville Power Administration. The revenue reimbursement will be an amount to cover annual expenses and the return of costs to be borne by power.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$12,968,932
Total obligations to June 30, 1952	318,106
Allotment, fiscal year 1953	1,500,000
Total obligations, fiscal year 1953	1,500,000
Allotment, fiscal year 1954	4,000,000
Total obligations, fiscal year 1954	4,000,000
Balance to complete	7,150,826

JUSTIFICATION OF ESTIMATE

Authorization

This division of the Yakima project was authorized by act of June 12, 1948 (62 Stat. 382).

Location

The Kennewick division is located in south central Washington in Benton County directly above the confluence of the Yakima and Columbia Rivers. Division works extend from the diversion dam at Prosser, easterly a distance of about 40 miles to the village of Hover.

Description

The Kennewick division is the last division of the Yakima project to be developed from the water resources of the Yakima River. The primary purpose of the division is to provide a full water supply for 18,871 acres of land, of which 14,534 acres are undeveloped rangelands, and 4,337 acres are presently irrigated by pumping from the Columbia Irrigation District's canal. Facilities of the division include the multipurpose power and irrigation features: Prosser diversion dam, Chandler Canal, Chandler power-and-pumping plant, Chandler switchyard and substation; and the irrigation features: Gravity main canal and wasteways, gravity and pump laterals, and Amon relift pumping plant. The project is designed to furnish a water supply for 18,871 acres of land and to have a hydroelectric powerplant of 12,000-kilowatt capacity.

Repayment

Repayment contract negotiations with the Kennewick Irrigation District were completed in November of 1952 and a favorable contract election was held in December 1952. It is expected that the contract will be executed on behalf of the United States Government and the irrigation district in the very near future.

Economic studies are continuing along with engineering investigations to determine the allocation of costs based on the recently revised estimate of total cost. Negotations are in process for a repayment contract with the Kennewick Irrigation District and are expected to be completed in 1952. Water-user repayment ability is correlated with land productivity. A water supply contract, dated April 7, 1921, provides for an annual irrigation water supply of 150,000 acre-feet from the Yakima River and storage system. In 1920 the Kennewick Irrigation District acquired the Prosser diversion dam and power canal rights-of-way extending from the Prosser dam to the Chandler power site and entered into a contract with the United States for construction of the Prosser power plant and rehabilitation of the Kennewick Highlands irrigation distribution system, the cost of which was repayable from power revenues. The power facility was completed in 1932 and the construction cost ($600,843.88) is now paid out. The contract further provides that, upon completion of payment of the power costs, net revenues from the sale of power shall apply toward payment of a $262,537.56 bond account which was used for purchasing the Prosser dam, power rights, and canal right-of-way. Approximately $7,000 have been paid on the bond account to date.

Status

The basic plan of development was covered in a comprehensive project planning report dated July 1947, which report was used as the basis for the authorizing act of June 12, 1948. Additional field investigations have been in progress during the last 3 fiscal years. These have been directed toward obtaining field data required for preparation of a definite-plan report and for design of the features to be first constructed. The field draft of volume I of the definite-plan report was completed the past year. The first construction funds were made available this current year with the first contract awarded in December for equipment procurement. As of June 30, 1953, construction will be active on the lower section of the Chandler Canal, division 1 of the main canal and Kiona wasteway. Supply contracts will be in force for furnishing pumps and prime movers, turbines and generators, for the Chandler power plant, and the main transformers. Preconstruction activities will be active on the Chandler power and pumping plant and other main canal divisions and wasteways. A warehouse at the Chandler power and pumping plant will be constructed during the current year.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes continuation of construction on the lower section of Chandler Canal, division 1 of the main canal, and Kiona wasteway. Construction will be initiated on Chandler power and pumping plant and division 2 of the main canal. Preconstruction activities will be started on the Prosser diversion dam and headworks, upper section of Chandler Canal (including fish screen structure), remaining divisions of the main canal, and Chandler switchyard and substation. Observation wells will be installed over the division during this year for collection of ground water data prior to irrigation. Partial payments will be made on large supply contracts entered into last year.

Justification

Full development of this division is urgently needed because of the loss of about 7,000 acres of irrigated farm land from the Richland Irrigation District wherein the city of Richland is now located. This is the administrative, business, and housing headquarters for the plutonium plant, Atomic Energy Commission, located at Hanford. The plutonium plant, constructed during World War II, is now in full operation and has continuously carried on a vigorous construction program. In addition, the construction of the McNary Dam and Reservoir by the Corps of Engineers will inundate 1,533 acres of presently irrigated land southeast of Kennewick. This loss of this acreage, together with encroachment of urban population upon irrigated farm lands adjoining the city of Kennewick, has resulted in at least a 50-percent reduction in the supply of agricultural products available for processing in local plants. Establishment of the Hanford Atomic Energy Works has added approximately 50,000 people in the tricity communities of Richland, Kennewick, and Pasco, thereby creating a population center, which, in itself, provides an excellent local consumer market for agricultural products. Production from over 4,000 acres now irrigated in the Kennewick Highlands district is characteristic of what may be expected from the new development. The Kennewick division will provide around 425 new farm opportunities for veterans and other interested parties. The power system will furnish required power for irrigation pumping, and during the nonirrigation season and offpeak irrigation months, substantial quantities of surplus power will be available for commercial distribution. Annual benefits from irrigation, power, and wildlife are estimated at $2,410,000 which exceeds estimated annual costs in ratio of 4.24 to 1.

The total estimated cost of the project has decreased from $13,159,300 to $12,932,100 (anticipated total obligations $12,968,932). This decrease is attributable to elimination from the estimate of the allocation cost of storage facilities serving the entire Yakima project balanced in part by increases due to higher cost of labor and material and to more detailed and accurate data on which to base the estimate.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Prosser Dam and headworks	$29,400			$1,000	$28,400
Chandler pumping plant	1,738,000		$102,000	610,000	1,026,000
Amon relift pumping plant	168,500				168,500
Chandler canal (power and irrigation)	3,986,000		710,000	1,423,000	1,853,000
Irrigation canals and wasteways	2,399,700		187,000	719,400	1,493,300
Laterals	994,800				994,800
Drains and observation wells	61,300			4,100	57,200
Farm unit development	44,000				44,000
Yakima River channel improvement	121,200				121,200
Chandler powerplant	2,710,200		255,000	1,126,000	1,329,200
Chandler switchyard and substation	289,000		30,500	101,000	157,500
Warehouse operators' houses, phone system	142,700		20,000		122,700
Wildlife fence, fish screens, and fish ladder	247,300			3,000	244,300
Total cost	12,932,100		1,304,500	3,987,500	7,640,100
Construction facilities		$3,086	40,000	5,000	−48,086
Stores		79	17,500	2,500	−20,079
Project investigations		321,099	5,000	5,000	−331,099
Operation and maintenance during construction	43,200				43,200
Transfers, credits and other expenditures	−6,368	−6,368			
Total expenditures	12,968,932	317,896	1,367,000	4,000,000	7,284,036
Unliquidated obligations		210	133,000		−133,210
Total obligations	12,968,932	318,106	1,500,000	4,000,000	7,150,826
Method of financing:					
Allotment, fiscal year 1953			1,500,000		
Allotments required				4,000,000	7,151,800

Mr. MARKWELL. This is one of the new starts, Mr. Chairman.

Mr. JENSEN. You are making a request for $4 million for this project in the 1954 budget. Will you give us a statement on that?

Mr. MARKWELL. Yes, sir.

(The matter referred to follows:)

The Kennewick division is the last division of the Yakima project to be developed from the water resources of the Yakima River and will supply some 18,870 acres of land as well as provide for the development of 12,000-kilowatt of power. Local elections gave overwhelming endorsement and approval for execution of a repayment contract by the district; execution on behalf of the Government is expected to take place shortly.

With satisfactory completion of the election, way was cleared for start of construction and contracts have now been awarded for the main units of the power and pumping plants which require long delivery periods. A contract for construction of the first 8 miles of canal has also been awarded. Additional contracts for the next reach of main canal and for individual structures and minor equipment are scheduled during the remainder of fiscal year 1953. Specifications are being prepared for the construction of the Chandler power and pumping plant in order that an award of contract for construction may be made by midsummer.

The funds requested for fiscal year 1954 will be used for progress payments on work now under contract and for the new contracts to be awarded.

The only new feature work in fiscal year 1954 will be drilling observation wells for collection of ground-water data. Preconstruction work on the canals and related features will be continued preparatory to award of contracts in the following fiscal year in order to carry on the orderly development of the project in anticipation of bringing the project to full completion in fiscal year 1956. Early completion of the division is essential to replace the loss of more than 50 percent of the division area agricultural productivity as the result of the Atomic Energy Commission and Corps of Engineers work in the vicinity and to aid in relieving the serious power shortages now handicapping the Pacific Northwest.

Mr. MARKWELL. This is one of the new starts which the Congress told us to go ahead with last year.

Mr. JENSEN. Just at that point, may I say that this committee never considered the Kennewick project a new start, and we never took it as such.

Mr. MARKWELL. I will amend my remarks then, Mr. Chairman, and say that the Congress authorized us to go ahead.

CONSTRUCTION AND REHABILITATION, OPERATION AND MAINTENANCE

YAKIMA PROJECT, ROZA DIVISION, WASHINGTON

The next is Yakima project, Roza division, Washington. We will insert in the record at this point pages 71, 72, and 73 of the special data and summary sheets which have been furnished to the committee by the Bureau and pages 435 through 438 of the justification.

(The matter referred to is as follows:)

Construction, Yakima project, Roza division, Washington

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$21,017,913	$37,350	$853,656
Unliquidated obligations	4,310	−2,310	40,000
Total obligations	21,022,223	35,040	893,656

HISTORY OF PROJECT DEVELOPMENT

Location

South-central Washington in Yakima and Benton Counties.

Purpose

Irrigation and power.

Authorization

November 6, 1935.

Initial date

Planning, 1903.
Advanced planning, 1936.
Construction, 1936.
Date of functional completion of construction, fiscal year 1957.
Fiscal year and amount of initial allomtment of appropriations for construction: Fiscal year 1937, $1,000,000.

COSTS

Original estimated cost	[1]$15,000,000
Unallocated	15,000,000
Present estimated cost	23,606,000
Allocation of cost:	
Irrigation	23,389,312
Power	60,100
Unallocated	156,588

[1] Excluding $2,500,000 project storage.

REPAYMENT

Status of repayment contract negotiations

Existing repayment contracts with the water users cover costs payable by irrigation. Amendment of these contracts currently under way providing for revision of payment period.

Amount to be repaid and repayment period

	Amount	Repayment period		
		Regular	Development	Total
Irrigation	$18,420,085	1945 to 1984	4 years	44 years.[1]
Power	[2] 5,029,327	1957 to 2022	0 years	66 years.

[1] Payout period will be extended by undetermined number of years by amendatory contract currently being negotiated.
[2] Consists of $60,100 commercial power costs and $4,969,227 irrigation costs.

Repayment of costs allocated to irrigation

Water users	$18,420,085
Power, direct	[1]4,969,227
Total	23,389,312

Repayment costs per acre

Federal investment per acre	$325.00
From irrigation (nonreimbursable)	256.00
From power revenue	69.00
Annual water user charges:	
Construction	6.25
Operation and maintenance	4.00
Total	10.25

Gross crop income per acre resulting from project irrigation (actual for calendar year 1951), $210.

[1] Includes substantial revenues from sale irrigation pumping power.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (full) ..... acres	72,000	72,000	72,000	72,000
Total	72,000	72,000	72,000	72,000
Power ..... kilowatts	.....	.....	.....	10,000
Nonfirm mills per kilowatt-hour (average)	.....	.....	.....	2.2

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$23,806,556
Total obligations to June 30, 1952		21,022,223
Prior year balance available	$47,696	
Balance available in subsequent year	−12,656	
Total obligations, fiscal year 1953		35,040
Allotment, fiscal year 1954	$881,000	
Prior year balance available	12,656	
Total obligations, fiscal year 1954		893,656
Balance to complete		1,855,637

JUSTIFICATION OF ESTIMATE

Authorization

The Yakima project, Roza Division, was authorized on November 6, 1935. The President approved a finding of feasibility submitted by the Secretary of the Interior under the provisions of the Fact Finders Act of December 5, 1924 (43 Stat. 672).

Location

The project is located in south-central Washington in Yakima and Benton Counties. The Roza Division works extend southeasterly from a point 8 miles north of Yakima to 15 miles east of Prosser.

Description

The primary purpose of the Roza Division is to provide full water supply for irrigation of 72,000 acres (45,000 acres by gravity flow and 27,000 acres by pumping) of semiarid land lying in a long, narrow strip on the eastern slope of the Cascade Mountains in the south central section of the State. Facilities of the division include the Roza diversion dam, 95 miles of main canal, an extensive lateral distribution system, 7 wasteways, and 17 major pumping plants. The power system includes the Roza switchyard, 62 miles of 34.5 kilovolt transmission line serving the pumping plants and the proposed 10,000-kilowatt Roza powerplant. A water supply contract calls for annual delivery of 375,000 acre-feet to the extent that such delivery can be made out of the available flow and storage facilities of the Yakima project. Provision was made in the first 11 miles of the main canal, at a cost of approximately $1 million for additional capacity of 965 cubic feet per second to serve the proposed powerplant. The Division is designed to furnish a water supply for 72,000 acres of land and to have an installed power capacity of 10,000 kilowatts.

Repayment

Two contracts have been executed with the Roza Irrigation District water users—one for repayment of the district's share of the project storage works for $2,500,000, and the other for repayment of the construction costs of all the Roza division facilities amounting to $21 million. The latter contract has

alternate provisions for handling of construction and operation and maintenance costs of the power facilities. Negotiations are now proceeding on drawing up of an amendatory repayment contract which will include more definite provisions relative to power facilities and revised scheduling of repayment costs.

Status

Construction began on January 28, 1936. As of June 30, 1953, the Division will be approximately 89 percent complete. The entire irrigation system is complete and water is available to all the acreage. Completed power facilities are the transmission lines and substations for operation of the electric pumping plants, the Roza substation at the powerplant site, and the upper 10.9 miles of the main canal which was constructed with additional capacity for power water. Basic field design data for the powerplant are completed. Minor construction on drainage facilities will be active, with the main objectives being to determine the extent that the Roza Division should be obligated for project drainage works and to lay out a drainage system for future construction. Disposition of Government-owned isolated tracts is planned for the current year.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes continuation of the drainage construction program in areas where field investigations show the need is the greatest. Construction will be initiated on the Roza powerplant, the only remaining feature upon which construction has not been started.

Justification

The need for irrigation water and power in this area has become increasingly more acute since construction was authorized, due to present world conditions, increased population, and the close proximity to the Hanford atomic-energy plant. All the primary irrigation facilities are completed and the remaining features should be finished as speedily as possible to avoid excessive costs. Early construction of drainage facilities is necessary to prevent damage to and loss of existing farm acreage. Construction of the Roza powerplant, programed to progress at the maximum efficient rate, is highly desirable as it will furnish power to all the Division's pumping plants and, during the nonirrigation season and off-peak irrigation months, power will be marketable through established agencies. The canals and tunnels leading to the power drop were purposely constructed with sufficient capacity to generate power at the site of wasteway No. 2 for the several pumping plants which serve some 27,000 acres. Construction at this time would permit the Bureau to capitalize upon the investment of some $1 million already made and fulfill the purpose for which the valuable project was constructed.

The total estimated cost has increased from $23,152,755 to $23,606,000 (anticipated total obligations $23,806,556) due to overruns in qualities on drainage construction and to increased cost of materials and labor for the construction of the proposed Roza powerplant.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
CONSTRUCTION PROGRAM					
Allocation of project storage	$2,500,000	$2,500,000			
Roza diversion dam and headworks	1,075,181	1,075,181			
Pumping plants and discharge lines	2,408,830	2,408,830			
Main canal, headworks to powerplant	3,348,900	3,337,677			$11,223
Main canal and wasteways, powerplant to end	7,108,134	7,107,334	$800		
Laterals and pipelines, gravity areas	1,304,573	1,304,573			
Laterals and pipelines, pump areas	1,661,229	1,660,679	550		
Drainage system	310,280	146,734	35,000	$69,000	59,546
Farm unit development	122,027	121,027	1,000		
Roza powerplant	2,677,000	60,689		778,000	1,838,311
Transmission lines, switchyards, and substations	886,620	886,620			
General property	203,226	203,226			
Total cost	23,606,000	20,812,570	37,350	847,000	1,909,080
Construction facilities				2,500	−2,500
Stores		5,736	−2,000	4,000	−7,736
Operation and maintenance during construction	124,404	124,404			
Transfers, credits, and other expenditures	76,152	75,203	2,000	156	−1,207
Total expenditures	23,806,556	21,017,913	37,350	853,656	1,897,637
Unliquidated obligations		4,310	−2,310	40,000	−42,000
Total obligations	23,806,556	21,022,223	35,040	893,656	1,855,637
Method of financing:					
Prior year balance available			47,696	12,656	
Balance available in subsequent year			−12,656		
Allotments required				881,000	1,855,700

Mr. McPHAIL. Mr. Chairman, request is being made for $881,000 for 1954.

Mr. JENSEN. $881,000?

Mr. McPHAIL. Yes, sir.

Mr. JENSEN. Our memorandum shows $893,656.

Mr. McPHAIL. We had a prior-year's balance available of $12,656.

Mr. JENSEN. Yes; our figures include the prior-year carryover.

Mr. McPHAIL. Yes, sir.

Mr. JENSEN. Which you are using in the 1954 budget?

Mr. McPHAIL. Yes, sir.

Mr. JENSEN. All right; go ahead.

Mr. McPHAIL. I submit the following statement for the record.

(The matter referred to follows:)

CONSTRUCTION AND REHABILITATION, YAKIMA PROJECT, ROZA DIVISION, WASHINGTON

The Roza division is located in south-central Washington in Yakima and Benton Counties. The entire irrigation system has been completed and water is available for the irrigation of 72,000 acres of land. In constructing the irrigation features capacity provision was made in the first 11 miles of the canal to provide water for the proposed Roza powerplant. This powerplant will utilize an available power drop to generate power for all of the division's irrigation pumping plants and in addition, during the nonirrigation season and offpeak irrigation months, surplus power will be available for marketing in the area through established agencies. The need for additional power in the whole Northwest, including this area, is acute and this available site offers a ready and economic means to provide some additional power, putting to use presently wasting waterpower and making available surplus energy during the winter

months when additional energy is urgently needed for all loads, including the Hanford atomic-energy plant and the defense industries operating in the area.

With the $881,000 requested in fiscal year 1954, it is proposed to start construction of the Roza powerplant in fiscal year 1954. All basic design work has been completed and the powerplant and necessary electric equipment would be placed under contract soon after funds have been provided. Funds will also be needed during fiscal year 1954 to continue construction of necessary project-drainage features.

Mr. JENSEN. Now, then, how much is in this amount for the powerplant?

Mr. MCPHAIL. Virtually all of the work contemplated is in connection with the powerplant.

Mr. JENSEN. It is all in connection with the powerplant?

Mr. LINEWEAVER. $69,000 is for drainage, and the rest of it is for the powerplant.

Mr. JENSEN. Then we better find out. $69,000 of it is for drainage?

Mr. LINEWEAVER. Yes, sir; that is correct.

Mr. JENSEN. All right, $69,000, and there is a $12,000 carryover. That $12,000 could be deducted from the $69,000 in the event we do not allow the powerplant, and if we appropriated $57,000 everything could be taken care of except the powerplant.

Let me ask you this question: Is there any money in this total amount of $893,656 for pumping facilities, pumping water onto the land?

Mr. LINEWEAVER. The pumps have all been installed, Mr. Chairman. There is money for operation.

Mr. JENSEN. They are all installed. All they need to do is hook the electricity on and the pumps are ready to go and pump water. That electricity is in plentiful supply right now at a very cheap rate, so we do not have to wait to put in this powerplant or have that expense to get water on that land. It is just as simple as that.

Mr. LINEWEAVER. The pumps are already in operation.

Mr. JENSEN. All right; we just want to know, and we want to be able to get water on the land. I am not saying what the committee will do at this time.

Mr. EATON. That $69,000 item for drainage does not complete the drainage work. There is an additional expenditure of $59,546 in 1955.

Mr. JENSEN. Can you not complete the drainage work this year if we give you the money? How much money will it take to complete the drainage work?

Mr. EATON. In addition to the $69,000, an additional $59,546.

Mr. JENSEN. Why did you not put it in this 1954 budget so you could do that work?

Mr. LINEWEAVER. I think we have had that subject up before.

Mr. JENSEN. Yes, plenty of times.

Mr. LINEWEAVER. That is the reason we brought all of these items in at one place. This is the cleanup.

Drainage is a problem that takes time to work out after this water is put on the land. We just cannot afford to do it unless we want to go in and waste a lot of money by trying to foresee what the drainage problems will be. After the water has been delivered maybe for 3 or 4 years, then the engineers and the irrigation districts are able to tell what drainage facilities will have to be installed.

Mr. JENSEN. All right, but why can we not make arrangements for the water users to do that work after we have completed the job and we have turned the job over to the water users? Why can we not turn the project over to them and then say in just that many words in the agreement that henceforth they will be responsible for any drainage problems that they experience on this project? By so doing we could get out from under a lot of these responsibilities that we have and we would not have to bother with them year in and year out, from now on until kingdom come.

Mr. LINEWEAVER. I agree with you, Mr. Chairman, that that is a highly desirable objective.

Mr. JENSEN. Then why do we not do it?

Mr. LINEWEAVER. That is a pretty long story, but I would like to just say briefly that the repayment contracts require us to finance the drainage as the conditions reveal that it is required.

Now, a lump-sum appropriation could be made for this year for what is required in 1955, and after this Roza division is turned over to the water users for operation, which we hope will be reasonably soon, we could arrange for the district to do this work with its own forces, but I think that we would be required to advance them the money under the repayment contract.

Mr. JENSEN. Now, most of this money that is spent from now on on the Roza project for such things as you have just explained will be spent for personnel hire, for people to go around and look at the place and see what they think has to be done, is not that about a fact?

Mr. LINEWEAVER. No, sir; I do not think that is wholly correct.

Mr. JENSEN. That is what they tell me around on these projects, and that is what they complain about.

Mr. LINEWEAVER. I think perhaps it is partly true that a good deal of it does go for personnel, but I would say that the greater part of this amount required for drainage appropriation for 1954 and 1955 will go for the installation of drains and excavations and things of that kind.

Mr. JENSEN. I do not suppose that we can do anything in this budget about things like that, but I certainly, as one member of this committee, hope that you will work toward the end of getting these projects which are nearing completion off the list of projects that this committee and the Congress have to deal with year in and year out, one year right after another, and that you will make some kind of a deal with the irrigators to take over these projects and be responsible for these things that must be done year in and year out, as you say, to keep the irrigation system in proper repair and proper running order.

Mr. LINEWEAVER. May I make this observation, that the Roza division of the Yakima project, which is the latest division that has been completed, is the only division that we are operating. The others, Tieton, Sunnyside, and Kittitas have all been turned over to the water users.

Mr. FENTON. Do you have a map here showing all of those Yakima projects together so that we may orient ourselves here? You talk about one division and then the other, and then you talk about another.

Mr. LINEWEAVER. Tieton is up at the top here [indicating on map].

Mr. JENSEN. The small map over there in the left-hand corner covers the whole Columbia River project.

Mr. LINEWEAVER. These are the headworks up here [indicating on map]. Here is Keechelus and Kachess Reservoirs, and Cle Elum. That is the Kittitas division [indicating on map].

Mr. JENSEN. How do you spell that?

Mr. LINEWEAVER. K-i-t-t-i-t-a-s. That has been turned over to the water users. The Tieton division has been turned over to the water users, and that division is paid out.

Wapato is an Indian project, and that gets this water through the Yakima project system. The Indian Office operates the Wapato.

Down here we have the Sunnyside division. Sunnyside has been turned over to the water users, and is paid out. I had the pleasure of being at Sunnyside in May last year when the final checks paying out the construction charges on it were delivered to me.

Our Roza division, which is along in here [indicating on map] is the only one of the divisions built by the Bureau which has not been turned over to the water users as yet.

Now, Kennewick, of course, is under construction, and is down here [indicating on map] down toward the Snake River.

Mr. JENSEN. All right, Mr. Lineweaver; thank you.

Mr. MARKWELL. Mr. Chairman, may I make one very brief statement with respect to drainage? One of the reasons why we have to keep on with it is because drainage, under the usual procedure, I mean construction drainage, is considered a capital cost and not just an operating cost. For that reason we cannot turn over the capital investment unless we adopt some new procedures.

Mr. BUDGE. I note that this statement does not include the number of employees on this project. How many employees are there?

Mr. LINEWEAVER. I have that right here, Mr. Budge. We have a total of 135 employees on the Yakima project. That is for construction, operation, and maintenance, and also operation and maintenance on the headworks. We operate all of the dams there. In the Sunnyside and Roza office at Sunnyside we have a total of 29 employees.

Mr. BUDGE. What is the acreage in those two projects?

Mr. LINEWEAVER. Seventy two thousand in Roza, and approximately the same in Sunnyside.

Mr. BUDGE. In line with what the chairman was saying a few moments ago, I think that the irrigators are thinking just the same way the chairman is, that they have to repay every dollar of Government expense in these salaries and that they will be mighty happy if the Bureau can accelerate the time when these projects are turned over to them so that they do not have to pay the Government personnel that stays out on the project.

Mr. EATON. Could I just comment on that, Mr. Budge?

Mr. BUDGE. No; I have some questions here that I want to ask.

Mr. LINEWEAVER. Would you like to have a list of the employees on the Yakima project put in the record, Mr. Budge? We have it right here.

Mr. JENSEN. Yes; put it in.

Mr. BUDGE. Yes; I would like to have it.

Mr. LINEWEAVER. Yes, sir.

(The matter referred to is as follows:)

Yakima project—Number of employees as of Dec. 31, 1952

Yakima	135
Project headquarters, Yakima, Wash	29
Field offices:	
Sunnyside division, Roza, Sunnyside, Wash	70
Kennewick division, Kennewick, Wash	30
Field stations:	
Tieton Dam, Wash	1
Bumping Lake Dam, Wash	1
Cle Elum Dam, Wash	1
Kachess Dam, Wash	1
Keechelus Dam, Wash	1
Pendleton, Oreg	1

Mr. BUDGE. Have there been any changes in the design of this project since the original authorization?

Mr. LINEWEAVER. Of the Roza project?

Mr. BUDGE. It is my recollection that the Roza division was authorized in 1932, and construction got under way several years later.

The first time I was on the project was in 1937. There were some readjustments in the location of the pumping plant, but the major canals and laterals are essentially the same as originally located.

Now, I understand that the major canals were put in, including a capacity of about 1,000 second-feet, I think, for this powerplant when the main Yakima canals were built some years ago.

Mr. MARKWELL. The cost was about $1 million, as I recall it.

Mr. BUDGE. I note that there is only one authorization for this project listed, November 6, 1935. I assume if there had been any substantial changes there would have been a reauthorization.

Mr. MARKWELL. There has not been on the Roza.

Mr. BUDGE. Your originally estimated cost was $15 million, and your present estimated cost is $23,606,000, in other words, 50 percent more than the water users originally thought they were going to have to pay.

Mr. MARKWELL. For construction.

Mr. LINEWEAVER. I think that district, of all of the districts that I have observed in the 15 years or more I have been with the Bureau, has kept pretty close tab on the expenditures, and they had a very efficient district organization. Two people that I know of in there, Mr. Wells and Mr. Lloyd Miller, have been on the board ever since that district was organized, and they have kept close tab on the expenditures as well as any changes in the project layout.

Mr. MARKWELL. May I state, Mr. Budge, that in terms of the value of the 1935 dollar and what it would buy in construction, that the present dollar will buy now less than half of what it would in 1935.

Mr. BUDGE. When did you commence this project?

Mr. LINEWEAVER. It was commenced prior to the war and went on during the war.

Mr. BUDGE. Mr. Eaton, did you have something to say?

Mr. EATON. I would like to comment, Mr. Budge, that we have already transferred the operation and maintenance to the water users on 61 projects and divisions of projects, including in the past 12 months the Owyhee project, which was transferred on January 1, the All-American project and the W. C. Austin project, and have now

reached agreements with the water users, and are in the final stages of taking up the contracts finally with the Orland project, the Cachuma project, and the Tucumcari project. We are just working out the transfer contracts so that those can move over on January 1, next, which will make 65.

Mr. BUDGE. I know the irrigators will be very happy if the program can be expedited, for they do not exactly relish the payment of the Federal salaries of the people you retain on those projects any longer than is absolutely necessary.

OPERATION AND MAINTENANCE

Mr. LINEWEAVER. Mr. Chairman, I would like to put an "Operation and maintenance" statement in the record on the Yakima project.

Mr. JENSEN. Without objection, it is so ordered.

(The matter referred to follows:)

OPERATION AND MAINTENANCE, YAKIMA PROJECT, WASHINGTON

The Yakima project is a multiple-purpose project located in south-central Washington on the eastern slope of the Cascade Mountains. When completed, it will provide irrigation water for approximately 473,000 acres of land. Presently, irrigation water is available to 459,000 acres. The water supply is secured from the natural flow of the Yakima River and its tributaries, supplemented by storage in 6 reservoirs having a combined storage capacity of 1,063,800 acre-feet.

All irrigation features of the project are operated by water-users organizations, except the storage reservoirs and diversion dams which are part of the Government reserved works, and the 72,000-acre Roza division which is Government-operated. Operation of the storage reservoirs is coordinated with forecasts of probable runoff data in order to provde all practcable reservor capacity for flood control while still insuring a maximum storage supply for irrigation.

For operation and maintenance of the Roza division and all multiple-purpose features except power, an appropriation of $525,000 is requested for fiscal year 1954. Of this total, $521,000 will be required for irrigation and will be repaid by project-water users during the year. A nonreimbursable allotment of $4,000 will be required for flood-control operations.

OPERATION AND MAINTENANCE, YAKIMA PROJECT, WASHINGTON, POWER FACILITIES

The Yakima project is located in south-central Washington, on the eastern slope of the Cascade Mountains, in the drainage basin of the Yakima River and its tributaries.

An allotment of $25,000 is requested in fiscal year 1954 for the normal operation and maintenance of the Prosser powerplant and switchyard, with an installed generating capacity of 2,400 kilowatts and 69 miles of transmission lines and 20 substations.

The allotment requested for fiscal year 1954 for this project is the same as that allowed in fiscal year 1953.

CONSTRUCTION AND REHABILITATION

EDEN PROJECT, WYOMING

Mr. JENSEN. We now come to the Eden project, Wyoming, and I note you are asking for $1,141,000 in the 1954 budget.

We will insert in the record at this point pages 74 and 75 of the special data requested of the Bureau in regard to this project and pages 440–443 of the justification.

(The matter referred to follows:)

CONSTRUCTION

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$2,725,259	$1,490,742	$1,328,613
Unliquidated obligations	918,355	−730,742	−187,613
Total obligations	3,643,614	760,000	1,141,000

HISTORY OF PROJECT DEVELOPMENT

Location

In southwestern Wyoming in Sweetwater County.

Purpose

Irrigation and regulation of Big Sandy Creek.

Authorization

Act of 1940 (53 Stat. 685) and W. C. U. (53 Stat. 1418) by President, September 18, 1940.

Reauthorization

Act of June 28, 1949 (Public Law 132, 81st Cong., 1st sess.).

Initial date

Planning, 1937.
Advanced planning, 1941.
Construction, 1941.
Date of functional completion of construction, fiscal year 1956.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1941, $1,154,595.

COSTS

Original estimated cost	$2,045,000
Allocation of cost: Irrigation	2,045,000
Present estimated cost	6,152,000
Allocation of cost: Irrigation	6,152,000

REPAYMENT

Status of repayment contract negotiations: Repayment contract executed June 8, 1950, with Eden Valley Irrigation and Drainage District.

Amount to be repaid and repayment period

Irrigation	$1,500,000
Repayment period (years):	
Regular	[1] 1936 to 2028
Development	10
Total	70

[1] 60 years plus development periods of 5 years for old lands and 10 years for new lands.

Repayment of costs allocated to irrigation

Water users	$1,500,000
Power: Direct and interest component	[1] 4,652,000
Total	6,152,000

[1] Amount set aside pursuant to act of June 28, 1949, for return from power revenues of proposed Colorado River storage project.

Repayment costs per acre

Federal investment per acre	$308.00
Irrigators	75.00
From power revenue	233.00
Annual water user charges:	
Construction	1.25
Operation and maintenance	2.00
Total	3.25

Gross crop income per acre resulting from project irrigation, $30.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$6,164,000
Total obligations to June 30, 1952		3,643,614
Allotment, fiscal year 1953	$486,000	
Prior year balance available	274,000	
Total obligations, fiscal year 1953		760,000
Allotment, fiscal year 1954	1,141,000	
Total obligations, fiscal year 1954		1,141,000
Balance to complete		619,386

JUSTIFICATION OF ESTIMATE

Authorization

Originally authorized under the water-conservation provision of the Interior Department Appropriation Act of 1940 (53 Stat. 685), and later placed under the water conservation and utilization program (53 Stat. 1418), approved by the President on September 18, 1940. Reauthorized by act of June 28, 1949 (Public Law 132, 81st Cong., 1st sess.).

Location

The project is located in southwestern Wyoming in Sweetwater County. Project area surrounds communities of Eden and Farson, Wyo. Project works extend north from Farson, Wyo.

Description

The primary purpose of the project is to provide a full water supply for the irrigation of 20,000 acres of arid land, including 9,000 acres of presently inadequately irrigated land, in the southwestern section of Wyoming, and also to provide storage and regulation of Big Sandy Creek water. Facilities of the project include Big Sandy Dam and Reservoir, Prospect diversion dam, Means Canal, Prospect Canal, Eden Canal rehabilitation and enlargement, lateral system, and drainage system.

Repayment

A contract has been executed with the Eden Valley irrigation and drainage district consistent with Public Law 132, 81st Congress, 1st session; authorizing completion of the Eden project. This law provides that not less than $1,500,000 of construction costs shall be reimbursable by the water users in not to exceed 60 years. Public Law 132 further provides "that construction costs of the irrigation features of the project which are not hereby made reimbursable by the water users shall be set aside in a special account against which net revenues derived from the sale of power generated at the hydroelectric plants of the Colorado River storage project in the upper basin shall be charged when such plants are constructed."

Status

The project was reauthorized for construction by Congress and approved by the President June 28, 1949. As of June 30, 1953, the project will be approximately 65 percent complete. Construction will be completed on Big Sandy Dam and Reservoir and Means Canal, and will be under way on Eden Canal rehabilitation, Prospect diversion dam, Prospect Canal, and the lateral system. Preconstruction operations will be active in connection with the drainage system.

Work proposed, fiscal year 1954

The program for fiscal year 1954 includes completion of construction on Prospect diversion dam, Prospect Canal, and Eden Canal rehabilitation. Construction will be continued on the lateral and drainage systems.

Justification

The local water supply is more than ample to serve the presently irrigated lands, but the need for repair and improvement of the existing irrigation system to assure continued service is vital. At present there is an urgent need for drainage work and this need will be greater when new land is placed under irrigation. In addition to stabilizing the agricultural economy of the area, the 11,000 acres of new land will produce food and fiber benefiting the defense effort. Any delay in the proposed program will seriously retard the development of the irrigated lands and will increase project costs.

The total estimated cost of the project has been increased from $5,993,000 to $6,152,000 (anticipated total obligation $6,164,000). This adjustment is due to the overrun of costs over estimates on completed work and revisions in design based on more complete field data.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Big Sandy Dam and Reservoir	$2,354,000	$1,862,964	$491,036		
Prospect diversion dam	62,000	9,507	17,893	$34,600	
Means Canal	602,000	231,733	370,267		
Prospect Canal	40,000	8,499	10,151	21,350	
Eden Canal rehabilitation and enlargement	1,505,000	124,979	638,021	742,000	
Lateral system	1,095,000	41,648	115,352	473,400	$464,600
Drainage system	494,000	96,724	54,276	135,000	208,000
Total cost	6,152,000	2,376,054	1,696,996	1,406,350	672,600
Construction facilities		255,551	−159,600	−56,750	−39,201
Stores		34,162	−10,162	−9,987	−14,013
Operation and maintenance during construction	12,000		4,000	8,000	
Transfers, credits, and other expenditures		59,492	−40,492	−19,000	
Total expenditures	6,164,000	2,725,259	1,490,742	1,328,613	619,386
Unliquidated obligations		918,355	−730,742	−187,613	
Total obligations	6,164,000	3,643,614	760,000	1,141,000	619,386
Method of financing:					
Allotment, fiscal year 1953			486,000		
Prior year balance available			274,000		
Allotments required				1,141,000	619,400

Mr. JENSEN. Will you briefly summarize the work that is going on in regard to that project.

Mr. MARKWELL. I have a statement, Mr. Chairman, which I would like to offer for the record on that project.

Mr. JENSEN. Without objection, it will be included in the record at this point.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION, EDEN PROJECT, WYOMING

Eden was authorized as a WCU project in 1940 and reauthorized as a reclamation project by the act of June 28, 1949. Its primary purpose is to provide adequate drainage and a full water supply for the irrigation of 11,000 acres of new land and 9,000 acres of inadequately irrigated land in Sweetwater County, Wyo. As of June 30, 1953 construction of the project, which will aid the development of southwestern Wyoming, will be 65 percent accomplished.

The fiscal year 1954 program, for which $1,141,000 is requested, includes continued construction on the lateral and drainage systems and completion of Prospect diversion dam, Prospect Canal, and Eden Canal rehabilitation. The rate of construction proposed for fiscal year 1954 is essential to bring about the completion of the project in 1956 and thus stabilize the economy of the surrounding area through increased production of food and fiber and make a contribution to the defense effort.

Mr. MARKWELL. Summarizing the project, it will be completed in fiscal year 1955, with an appropriation of $619,336, in addition to the $1,141,000 we are asking for 1954.

Mr. BUDGE. I would like to ask if this project, or which project is it that has a request to build the transmission line from Sinclair, Wyo. to Westvoco, Wyo.

Mr. MCPHAIL. That is the Kendrick project.

Mr. BUDGE. Has the operation and maintenance on this project been combined with the operation and maintenance on any other project?

Mr. LINEWEAVER. No, sir.

Mr. BUDGE. Wherever that is the case, will you indicate in the record if operation and maintenance for certain project is combined with any other project item?

(The information requested follows:)

Parker Dam and Davis Dam projects combined under Parker-Davis project, Operation and Maintenance. See page 2561 of the transcript. The transmission facilities of the Colorado-Big Thompson, Riverton, Shoshone, and Kendrick projects have been combined in the Missouri River Basin area under "Operation and maintenance," Missouri River Basin project. See page 3089 of the transcript.

Mr. MARKWELL. With reference to the Eden project, we have an item in the schedule of $8,000 for operation and maintenance during construction.

Mr. BUDGE. During construction? Operation and maintenance during construction?

Mr. MARKWELL. Yes, sir.

Mr. BUDGE. Will you briefly explain how that comes about?

Mr. MARKWELL. Yes, sir. The project will come in gradually and the main works are not completed. It is necessary for us to do certain work which under the accounting system approved by the General Accounting Office is classified as maintenance and operation during construction. As soon as the project is completed, or nearly completed, then we will ask for Operational and maintenance items, when our construction projects first begin to be usable, in a small way, you will find the item of operation and maintenance during construction.

CONSTRUCTION AND REHABILITATION AND OPERATION AND MAINTENANCE

KENDRICK PROJECT, FIRST UNIT, WYOMING

Mr. JENSEN. We will next take up the Kendrick project in Wyoming.

We will insert in the record at this point the special data requested of the Bureau on this project.

We will also place in the record at this time pages 445 through 449 of the construction justification and pages 192 through 196 of the operation and maintenance justification.

(The matter referred to is as follows:)

CONSTRUCTION AND OPERATION AND MAINTENANCE

Construction

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$24,423,212	$5,181,380	$2,970,000
Unliquidated obligations	1,082,188	−1,082,188	
Total obligations	25,505,400	4,099,192	2,970,000

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$390,591	$130,000	$122,170
Unliquidated obligations	6,741		
Total obligations	397,332	130,000	122,170
Unobligated balance	121,268		
Less funds advanced by water users			3,500
Appropriation or estimate	518,600	[1] 130,000	118,670

[1] Excludes $395,700 allotted to the Kendrick project but scheduled under Missouri River Basin project for integrated power system operations.

HISTORY OF PROJECT DEVELOPMENT

Location

In Natrona and Carbon Counties, Wyo.

Purpose

To provide irrigation and power.

Authorization

Finding of feasibility approved by President August 30, 1935.

Initial date:

Planning, 1904.
Advanced planning, 1933.
Construction, 1933.
Date of functional completion of construction, fiscal year 1956.
Fiscal year and amount of initial allotment of appropriations for construction (initiated under provisions of the National Industrial Recovery Act of 1933), $12,000,000.

COSTS

Original estimated cost (first unit only)	$20,004,000
Allocation of cost; unallocated	20,004,000
Present estimated cost	33,318,000
Allocation of cost:	
Irrigation	15,646,585
Power	16,555,615
Downstream benefit to and payable by Kortes unit, Missouri River Basin project	1,115,800

REPAYMENT

Status of repayment contract negotiations:

Amendatory repayment contract being negotiated.

Amount to be repaid and repayment period

	Amount	Repayment period		Total
		Regular	Development	
Irrigation	[1] $796,680	40 years	5 years	45 years.
Power	[2] 31,405,520	1940 to 2008	0 years	Years.[2]

[1] Amount shown and payout period based on terms of amendatory repayment contract being negotiated.
[2] Construction costs allocated to commercial power ($16,555,615) is scheduled to be paid 50 years from date individual facility becomes revenue producing or by 2008. Irrigation costs ($14,849,905) assigned for payment by power are scheduled for payment by the year 1998.

Repayment of costs allocated to irrigation

Water users	$796,680
Power: Interest component	14,849,905
Total	15,646,585

Repayment costs per acre

Federal investment per acre	$782.00
From irrigators	40.00
From power revenue	742.00
Annual water-user charges:	
Construction	1.00
Operation and maintenance	2.20
Total	3.20

Gross crop income per acre resulting from project irrigation (estimated for mature stage of development), $50.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres): Full	9,500	11,000	13,000	20,000
Total	9,500	11,000	13,000	20,000
Power (kilowatts)	32,400	32,400	32,400	32,400
Power rates (mills per kilowatt-hour):				
Firm at 50 percent load factor	7.1	7.1	7.1	5.4
Nonfirm (average)	4.3	4.3	4.3	3.3

NOTE.—Project cost and repayment shown herein does not include the second unit. For power-system repayment study, an estimated cost of $4,420,385 has been included as a project cost.

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Power facilities:			
Actual, June 30, 1952	53	1	
1953	8		
1954	9		
Joint facilities:			
Actual, June 30, 1952			
1953	1		
1954	1		
District Headquarters Charges:			
Actual, June 30, 1952			6.6
1953			4.7
1954			.8
Denver Office:			
Actual, June 30, 1952			
1953			.1
1954			.1
Regional CPA services:			
Actual, June 30, 1952			1.0
1953			.2
1954			.1
Total:			
Actual, June 30, 1952	53	1	7.6
1953	9		5.0
1954	10		1.0

Other project statistics, see p. BR-196.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$34,086,000
Total obligations to June 30, 1952		25,505,400
Allotment, fiscal year 1953	$3,750,000	
Prior year balance available	349,192	
Total obligations, fiscal year 1953		4,099,192
Allotment, fiscal year 1954	$2,970,000	
Total obligations, fiscal year 1954		2,970,000
Balance to complete		1,511,408

JUSTIFICATION OF ESTIMATE

Authorization

The Kendrick project was authorized by finding of feasibility approved by the President August 30, 1935, under the provisions of the Fact Finders' Act of December 5, 1924 (43 Stat. 672).

Location

The Kendrick project is located principally in Natrona and Carbon Counties, Wyo. The five major construction features comprising the project are: (1) Seminoe Dam and powerplant located approximately 55 miles southwest of Casper, Wyo.; (2) Alcova Dam and appurtenant structures located at Alcova, Wyo.; (3) Casper Canal and lateral system which will carry water for irrigating lands lying in a semicircular area southwest, west, and north of Casper, Wyo.; and (5) ultimately 700 miles of transmission lines and 12 substations which will distribute power generated at Seminoe Dam and Alcova powerplant to central and southern Wyoming, western Nebraska, and northern Colorado.

Description

The project is designed eventually to irrigate 45,000 acres of arid land and produce 32,400 kilowatts of power at the Seminoe powerplant and 36,000 kilowatts of power at the Alcova powerplant. Seminoe Dam creates one of the project's storage reservoirs with a capacity of 1,025,000 acre-feet. This reservoir and

that created by Alcova Dam (190,000 acre-feet) provide the storage facilities for the project. The Seminoe powerplant has three 10,800-kilowatt generating units which have been in operation since August 1939.

Power produced in this plant is being distributed over the present transmission system consisting of approximately 680 miles of transmission lines, ranging from 115 kilovolts to 4 kilovolts. The plant is interconnected with the transmission lines of the Bureau's Shoshone, Riverton, North Platte, and Colorado-Big Thompson projects, and the transmission lines and powerplants of the Missouri River Basin project. The Alcova powerplant will have an installed capacity of 36,000 kilowatts, consisting of two 18,000-kilowatt units. Power generated at the Alcova plant will be distributed over the existing transmission lines and substations.

Repayment

The cost of construction of this project will be fully reimbursed from revenues from the sale of electrical energy and from payments made by the irrigators whose lands comprise the Casper-Alcova Irrigation District. The existing repayment contract with the Casper-Alcova Irrigation District dated May 25, 1935, has been found to be unworkable and negotiations leading to a sound amendatory repayment contract are in progress.

Status

Construction began during 1933 under the name Casper-Alcova project. As of June 30, 1953, the project will be 83 percent complete. The Bureau has been operating the irrigation project prior to turning it over to an irrigation district to be composed of water users, and water deliveries to farmers began with the spring of 1946. By June 30, 1953, about 11,000 acres of the first unit will be under cultivation.

Work proposed, fiscal year 1954

Deferred construction of canals, laterals, and drains is being scheduled to meet demands brought about by the settlement pattern of the project. The major portion of funds allotted for fiscal year 1954 will be expended on completion of Alcova powerplant and minor electrical facilities. Lining operations will continue on the canal system and the existing structures and canal road will be improved as needed.

Justification

The demand for power in this area is steadily increasing and it is evident that this will continue for several years. Since existing plants cannot meet this demand, construction of Alcova powerplant was started during fiscal year 1952 and completion of this additional generating capacity of 36,000 kilowatts is scheduled for the end of fiscal year 1954. Continued construction activities on the canal system are essential to alleviate seeped condition and to place the canal system in a satisfactory operating condition.

The total estimated cost of the Kendrick project has increased from $30,774,000 to $33,318,000 (anticipated estimated obligations, $34,086,000). The major portion of the cost increase results from increased costs and quantity amounts in the construction of the Alcova powerplant and switchyard. Other cost increases result from lining and improvement work on the canal system and the need for an additional structure and switching equipment on the Seminoe-Cheyenne transmission line.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Seminoe Dam and Reservoir	$5,315,000	$5,056,612			$258,388
Alcova Dam	3,430,000	3,321,279			108,721
Canal system	4,487,000	4,006,897	$110,000	$200,000	170,103
Lateral system	1,994,000	1,650,980	125,000	75,000	143,020
Drainage system	1,201,000	65,034	50,000	65,000	1,020,966
Farm unit development	178,000	114,844	15,000	15,000	33,156
Seminoe powerplant	2,230,000	2,309,044			−79,044
Alcova powerplant and switchyard	6,931,000	491,982	4,100,000	2,200,000	139,018
Seminoe switchyard and additions	318,000	286,859			34,141
Seminoe-Casper, 69-kilovolt and related substations	155,000	178,073			−23,073
Seminoe-Rawlins, 34.5-kilovolt and related substations	190,000	116,053			73,947
Seminoe-Cheyenne, 115-kilovolt and related substations	1,181,000	1,066,622	109,605		4,773
Cheyenne substation and additions, 115 kilovolt	580,000	569,216			10,784
Cheyenne-Greeley, 115-kilovolt	365,000	358,649			6,351
Cheyenne-Gering, 115-kilovolt and related substations	558,000	537,009			20,991
Casper-Thermopolis, 69-kilovolt and related substations	332,000	328,515			3,485
Seminoe-Casper, 115-kilovolt and related substations	1,830,000	1,390,182	165,000	222,000	52,818
Casper area tie lines	70,000	46,899	23,195		−94
Medicine Bow-Rawlins, 34.5-kilovolt and related substations	634,000	534,177	62,000	40,000	−2,177
Seminoe-Bairoil, 34.5-kilovolt and related substations	266,000	246,063	9,384		10,553
Distribution lines and substations	89,000	79,442			9,558
General property	984,000	297,717	151,000	100,000	435,283
Total cost	33,318,000	23,052,148	4,920,184	2,917,000	2,428,668
Construction facilities		385,714	170,000	−5,000	−550,714
Stores		299,929	−13,804		−286,125
Project investigations		242,673		−22,000	−220,673
Operation and maintenance during construction	543,000	241,916	80,000	80,000	141,084
Transfers, credits, and other expenditures	225,000	200,832	25,000		−832
Total expenditures	34,086,000	24,423,212	5,181,380	2,970,000	1,511,408
Unliquidated obligations		1,082,188	−1,082,188		
Total obligations	34,086,000	25,505,400	4,099,192	2,970,000	1,511,408
Method of financing:					
Allotment, fiscal year 1953			3,750,000		
Prior-year balance available			349,192		
Allotments required				2,970,000	1,511,400

Operation and Maintenance

Summarized financial data

Total, fiscal year 1952	$397,332
Fiscal year 1953	[1] 130,000
Total obligations, 1953	[1] 130,000
Fiscal year 1954:	
Allotment	118,670
Funds advanced by water users	3,500
Total obligations, 1954	122,170

[1] Excludes $395,700 allotted to the Kendrick project but scheduled under Missouri River Basin project for integrated power system operations.

JUSTIFICATION OF ESTIMATE

Location

Kendrick project is located on the North Platte River near Casper, Wyo. Water stored is presently used for power production and the regulation of the North Platte River. Water stored will ultimately be released for irrigation of 20,000 acres from irrigation works nearing completion, with a second unit of 25,000 acres to be developed when adequate water supply is available. Seminoe powerplant is located approximately 60 miles south and west of Casper, Wyo.

General conditions

Seminoe Dam, major storage structure of the project, has a reservoir capacity of 1,025,000 acre-feet, of which 970,000 acre-feet are active. Alcova Dam, 34 miles downstream from Seminoe, creates a reservoir of 190,500 acre-feet and diverts water into the Casper Canal serving the Kendrick project. The Seminoe powerplant, of 32,400-kilowatt capacity, is linked with the transmission system connecting the North Platte, Missouri River Basin, Riverton, and Shoshone plants, and plants of the Colorado-Big Thompson project. The Seminoe powerplant is operated for the sale of power to municipalities and power companies in Wyoming and western Nebraska. In order that the Kendrick project can produce and deliver a dependable year-round supply of electrical energy to its customers, continuous and adequate operation and maintenance of the power system is necessary. Funds for the power facilities now in operation are financed through appropriations from power revenues, and irrigation facilities in operation are financed from construction funds as operation and maintenance during construction.

Work proposed, 195½

	Program, 1954	Increase (+) or decrease (−) from 1953
MULTIPURPOSE FACILITIES		
Storage system	$14,000	+$41,000
For continued operation of Seminoe Dam and Reservoir.		
Replacements and improvements		−1,000
Total obligations, multipurpose	14,000	
POWER FACILITIES		
Electric generation	105,670	+14,170
For normal operation and maintenance of Seminoe powerplant. Increase due to wage board salary increases and additional maintenance required at Seminoe Dam.		
Replacements and improvements	2,500	−22,000
Total obligations, power	108,170	−7,830
Total obligations, all facilities	122,170	−7,830

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
MULTIPURPOSE FACILITIES			
Operation and maintenance storage system	$10,394	$13,000	$14,000
Replacements and improvements		1,000	
Total obligations, multipurpose	10,394	14,000	14,000
POWER FACILITIES			
Operation and maintenance:			
Electric generation	104,387	91,500	105,670
Other production expense	222,405		
Transmission and distribution expense	170,661		
Replacements and improvements	21,438	24,500	2,500
Subtotal, power	518,891	116,000	108,170
Project energy interchange (net)	−131,953		
Total obligations, power	386,938	116,000	108,170
Total obligations, all facilities	397,332	130,000	122,170
Allocation:			
Irrigation			3,500
Power	397,332	130,000	118,670
Total obligations	397,332	130,000	122,170
Method of financing:			
Allotment	518,600	[1] 130,000	
Unobligated balance	−121,268		118,670
Funds advanced by water users			3,500

[1] Excludes $395,700 allotted to the Kendrick project but scheduled under Missouri River Basin project for integrated power system operations.

Project statistics

Feature or item	Unit	Actual, fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
Power system: [1]				
Annual sales	Kilowatt-hour	181,133,877	(1)	(1)
Total power revenues	Dollars	$1,112,630	(1)	(1)
Powerplants	Number	1	1	1
Plant capacity	Kilowatts	32,400	32,400	32,400

[1] Power revenues and sales are shown under Missouri River Basin integrated power operation statistics.

CONSTRUCTION AND REHABILITATION, KENDRICK PROJECT, FIRST UNIT, WYOMING

Work was started on the Alcova Dam on the Kendrick project first unit in 1935. The project will supply new irrigation water to 20,000 acres and develop a power capacity of 68,400 kilowatts. As of June 30, 1953, the project will be approximately 83 percent complete. Seminoe powerplant has been in operation since 1939 and construction of the Alcova powerplant was started in January 1952. Power generated by the project is distributed over transmission lines that are interconnected with those of the Shoshone, Riverton, North Platte, Colorado-Big Thompson and Missouri River Basin projects. Present generating capacity is insufficient to meet the power demands of the area served.

During fiscal year 1954, $2,970,000 are required to continue construction. Most of the funds requested will be used to continue construction of Alcova powerplant and switchyard so that power may be delivered by the end of the fiscal year to the power-deficient area. Substation additions will be made and communication and control systems will be substantially completed during the

year. The canals and laterals of the project have been in service for several years and seepage and other defects have developed. To correct these a canal lining and improvement program was started in 1951 and will be continued during fiscal year 1954. Funds also will be used to continue the farm development and settlement program in conjunction with the University of Wyoming and the county agent's office.

Mr. JENSEN. On the first unit you are requesting $2,970,000 for that project in the 1954 budget.

It is understood that the soil analysis shows only half of the original project acreage is capable of agricultural production. What does this do to the repayment program?

Mr. LINEWEAVER. Mr. Chairman, it will necessitate the negotiation of a new repayment contract with the district, which is now in progress.

Mr. EATON. That is correct.

Mr. LINEWEAVER. That project was authorized back in the thirties and bears the name of the late Senator Kendrick who was a Member of the Senate for many years. My recollection is that the authorization prescribed the original repayment plan.

Mr. EATON. The original repayment contract with the irrigation district was executed by them August 3, 1935, and the obligation in that contract was based on an irrigable acreage of 35,000 acres. The present land classification shows the irrigable area to be 20,000 acres, and repayment contract is being negotiated with the irrigation district and will have to be presented for approval to Congress.

Mr. JENSEN. Why should additional irrigation facilities, for which you are requesting $355,000 in this budget, be built?

Mr. EATON. We are still carrying the laterals out to portions of that 20,000 acres that have not yet been reached by laterals.

Mr. JENSEN. That is the reason you are asking for this amount?

Mr. EATON. Yes, sir; that is the principal use of it.

Mr. JENSEN. What other construction is involved?

Mr. EATON. For the other construction, the money is divided up in this way: $200,000 for the canal system, $75,000 for the lateral system, $65,000 for the drainage system, and $15,000 for farm unit development.

Mr. LINEWEAVER. Mr. Chairman, the project was authorized by the finding of feasibility, approved by the President, August 30, 1935, under the provisions of the Fact Finders Act of December 5, 1924. That was before the 1939 Reclamation Project Act came in.

Mr. JENSEN. But money has already been appropriated for construction on this project?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. The project is under construction, is it not?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. So, it would not be good business to stop it now and insist on congressional authorization?

Mr. LINEWEAVER. It is a multipurpose project and has power facilities that will assist in repaying the cost.

Mr. JENSEN. You are asking for $118,670 for operation and maintenance. Will you make a statement on that?

Mr. LINEWEAVER. Yes, sir; I have a brief statement on that.

(The matter referred to is as follows:)

OPERATION AND MAINTENANCE, KENDRICK PROJECT, WYOMING

The Kendrick project is located on the North Platte River near Casper, Wyo. Seminoe Dam, major storage structure of the project, has a reservoir capacity of 1,025,000 acre-feet, of which 970,000 acre-feet are active. Alcova Dam, 34 miles downstream from Seminoe, creates a reservoir of 190,500 acre-feet and diverts water into the Caspar Canal serving the Kendrick project. Water stored which will ultimately be released for irrigation of 20,000 acres from irrigation works nearing completion, with a second unit of 25,000 acres to be developed when adequate water supply is available is presently used for power production and the regulation of the North Platte River.

Irrigation facilities that are now in operation are financed from construction funds as operation and maintenance during construction, except for an item of $3,500 advanced by water users to cover the irrigation portion of multipurpose costs. No operation and maintenance appropriation is required for operation and maintenance of irrigation features of the project.

OPERATION AND MAINTENANCE OF POWER FACILITIES

Mr. MCPHAIL. Mr. Chairman, I have a statement on operation and maintenance which I would like to put in the record.

Mr. JENSEN. Without objection, it is so ordered.

(The matter referred to follows:)

OPERATION AND MAINTENANCE, KENDRICK PROJECT, WYOMING, POWER FACILITIES

The Kendrick project is located on the North Platte River near Casper, Wyo.

Of the total funds being requested in fiscal year 1954 for the operation and maintenance of the Kendrick project, an allotment of $118,670 is required for the normal operation and maintenance of Seminoe powerplant and switchyard, which has an installed generating capacity of 32,400 kilowatts, plus that portion of the multipurpose facilities that are charged to power.

The allotment for fiscal year 1954 represents a decrease of $11,330 compared with the fiscal year 1953 allotment.

The expense of operation and maintenance of the transmission lines and substations is included with the allotment request of the Missouri River Basin project.

ALLOTMENT FOR INTEGRATED POWER OPERATIONS

Mr. BUDGE. Mr. Lineweaver, what is this item under subparagraph 1 on page 76 of your detailed statement where it says

excludes $395,700 allotted to the Kendrick project, but scheduled under the Missouri River Basin project for integrated power operations.

Mr. LINEWEAVER. Mr. McPhail, can you explain that briefly?

Mr. MCPHAIL. As we explained to the committee last year, Mr. Budge, we combined the operation of the transmission facilities under the Missouri Basin project, due to the integrated operation of the several projects connecting together and we carry the operation and maintenance features for this facility all under one project.

Mr. BUDGE. What connection does that item have with this $1,371,000 request that you have for 1954 for the line from Sinclair, Wyo. to Westvaco, Wyo.?

Mr. MCPHAIL. That is a construction item that is carried on the Missouri Basin project.

Mr. BUDGE. What connection does this $395,700 have with it?

Mr. MCPHAIL. If I get your question right, one is for construction and the other item is for operation and maintenance.

Mr. BUDGE. That $395,700 is for operation and maintenance?

Mr. MCPHAIL. Yes, sir; of all the facilities. That does not have relation to the connection which you mentioned.

Mr. BUDGE. You should put a statement in the record, explaining just what that item indicated "1" is. I do not understand it.

Mr. LINEWEAVER. Yes, sir. We will do that, Mr. Budge. I think we can straighten that out in the record.

(The information requested follows:)

KENDRICK OPERATION & MAINTENANCE

The $395,700 shown in subparagraph 1 on page 76 of the Special Data Requested by the House Appropriation Subcommittee in connection with 1954 appropriation estimates, is comprised of $195,700 allocated for the operation and maintenance including replacement and improvement items and $200,000 for the purchase of power, for fiscal year 1953 for the power system on the Kendrick project.

On July 1, 1952, the Kendrick project power transmission system for operating purposes was consolidated with similar systems of the Riverton, Shoshone, Colorado-Big Thompson, and that portion of the Missouri River Basin project in Colorado, Wyoming, and western Nebraska. The Missouri River Basin project was designated as the operating and marketing agent for this integrated system. Therefore, the $195,700 of operation, maintenance, and replacement funds and the $200,000 for purchase of power, applicable to the Kendrick project for transmission system operation for fiscal year 1953, were transferred to the Missouri River Basin project and the total amount of $395,700 was thereby excluded from the Kendrick project for fiscal year 1953.

RIVERTON PROJECT, WYOMING

Mr. JENSEN. The next item is the Riverton project, Wyoming. We will insert in the record at this point the special data sheets and pages 452 through 456 and 197 through 203 covering justifications for construction and operation and maintenance of this project.

(The matter referred to is as follows:)

RIVERTON PROJECT, WYOMING

Construction

	Actual as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$18,801,052	$872,736	$475,000
Unliquidated obligations	206,463	−206,463	
Total obligations	19,007,515	666,273	475,000

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$204,129	$182,618	$127,400
Unliquidated obligations	−15,450	−11,018	
Total obligations	188,679	171,600	127,400
Appropriation or estimate	[1] 216,860	[2] 171,600	127,400

[1] Appropriation amount of $28,181 in excess of needs.
[2] Does not include $45,750 allotted to Riverton but scheduled under Missouri River Basin Transmission Division for integrated power operations.

HISTORY OF PROJECT DEVELOPMENT

Location

In Fremont County, Wyo., in the west central part of the State.

Purpose

To provide a full irrigation supply to the project lands and power for interconnection.

Authorization

Act of May 25, 1918 (40 Stat. 561), as an irrigation project under the Bureau of Indian Affffairs.

Reauthorization

The project was placed under the jurisdiction of the Bureau of Reclamation by act of June 5, 1920 (41 Stat. 874, 915).

Initial date

Planning, 1904.
Advanced planning, 1920.
Construction, 1920.
Date of functional completion of construction, fiscal year 1957.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1921, $100,000.

COSTS

Original estimated cost	$6,777,025
Allocation of cost, unallocated	6,777,025
Present estimated cost	24,676,000
Allocation of cost:	
Irrigation	24,209,368
Power	466,632

REPAYMENT

Status of repayment contract negotiations

Cost of the first and second divisions is covered in amendatory repayment contract authorized by the act of June 23, 1952 and executed in 1952 with Midvale Irrigation District. Repayment of third division costs will be covered in a repayment contract to be negotiated with public land settlers following formation of an irrigation district.

Amount to be repaid and repayment period

An estimated 92-year period will be required under the amendatory repayment contract with Midvale district to return original construction cost of first and second divisions exclusive of the cost of rehabilitation and betterment costs. Repayment period for third division costs has not been determined but is expected to exceed water users ability to pay in 40 years. Return of commercial power allocation ($466,632) is expected by the year 1956. Return of irrigation costs ($281,469) to be paid from power revenues is scheduled to be completed by 1975 or an overall period of 36 years.

Repayment of costs allocated to irrigation

Water users		$23,319,865
Nonreimbursable		[1] 608,034
Power:		
Direct	$218,295	
Interest component	63,174	
		281,469
Total		24,209,368

[1] Pursuant to act of June 23, 1952.

Repayment costs per acre

Federal investment per acre	$247.00
Nonreimbursable	6.00
From power revenue	3.00
From irrigators	238.00
Annual water user charges:	
Construction	1.40
Operation and maintenance	1.60
Total	[1] 3.00

[1] Annual charges applicable to first and second divisions only.

Gross crop income per acre resulting from project irrigation (actual for current year 1951), $45.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation, acres, full	62,000	62,000	62,000	98,000
Total	62,000	62,000	62,000	98,000
Power, kilowatts	1,600	1,600	1,600	1,600
Power rates (mills per kilowatt-hour):				
Firm at 50 percent load factor	7.1	7.1	7.1	5.4
Nonfirm (average)	4.3	4.3	4.3	3.3

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Irrigation facilities:			
Actual June 30, 1952	14		
1953	25	5	
1954	24	2	
Power facilities:			
Actual June 30, 1952	10		
1953	34		
1954	26		
District headquarters charges:			
Actual June 30, 1952			
1953			2.0
1954			2.0
Denver office:			
Actual June 30, 1952			.2
1953			
1954			
Total:			
Actual June 30, 1952	24		.2
1953	59	5	2.0
1954	50	2	2.0

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$24,676,000
Total obligations to June 30, 1952		19,007,515
Allotment, fiscal year 1953	$233,307	
Prior year balance available	432,966	
Total obligations, fiscal year 1953		666,273
Allotment, fiscal year 1954		475,000
Total obligations, fiscal year 1954		475,000
Balance to complete		4,527,212

JUSTIFICATION OF ESTIMATE

Authorization

The Riverton project was authorized by act of May 25, 1918 (40 Stat. 561), as an irrigation project under the Bureau of Indian Affairs. The project was placed under the jurisdiction of the Bureau of Reclamation by act of June 5, 1920 (41 Stat. 874, 915).

Location

The project is located in Fremont County, Wyo., in the west-central part of the State, 122 miles west of Casper, Wyo., and 177 miles southeast of Yellowstone National Park. Project land is on the ceded portion of the Wind River Indian Reservation.

Description

The primary purpose of the project is to provide for a full water supply for the irrigation of 98,000 acres of semiarid new lands. Of this total, the development of 42,000 acres was completed prior to 1940. The development of an additional 7,000 acres in the Lost Wells and Pilot Extension areas was completed in fiscal year 1948. An additional 6,000 and 7,000 acres were opened to settlement in October 1949 and August 1950, respectively.

The project derives its water supply from Wind River and tributaries having Bull Lake Reservoir as its principal storage and Pilot Butte Reservoir as supplemental storage. Water from the natural flow in Wind River and supplemental storage from Bull Lake is diverted at Wind River diversion dam into Wyoming Canal and flows easterly 9 miles to a point where it is diverted through a drop and powerplant to Pilot Butte Reservoir. Pilot Canal conveys water from this reservoir to serve a part of the irrigable land while Wyoming Canal extends easterly, from a point of diversion to the Pilot Butte powerplant, to serve the remainder of the project.

The Pilot Butte powerplant has a capacity of 1,600 kilowatts and is interconnected with the Bureau of Reclamation's transmission system extending throughout Wyoming.

The plan for completing the full development of the project provides for extending the Wyoming Canal from station 2560 to the end to serve the Cottonwood Bench area, and beginning from the bifurcation works near the Wyoming Canal tunnel, the Muddy Ridge Canal will be constructed to provide irrigation water to the Muddy Ridge area.

Repayment

Partial reimbursement for construction costs will be obtained from power revenues. An amendatory repayment contract has been signed by the Midvale Irrigation District for $7,000,000 covering its share of construction costs of the project including rehabilitation and betterment costs. As additional divisions of the project are completed and settled, appropriate repayment contracts will be negotiated to cover the remaining portion of the reimbursable cost of the project assigned to irrigation.

Status

At the beginning of fiscal year 1953, development and settlement of 62,000 acres in the Midvale Irrigation District, North Pavillion area, and North Portal area had been completed. All joint facilities and irrigation facilities for lands within the North Portal area were substantially complete. Construction of the Wyoming Canal from station 2560 to 3304 (end) was approximately 98 percent complete with the corresponding lateral system approximately 53 percent complete. Additional canal lining was constructed in various reaches of the Wyo-

ming Canal. Surveys will be made and plans and specifications prepared for the Badger lateral, serving a portion of the lands in the Cottonwood Bench area, and for the Muddy Ridge lateral system. Lining of several reaches of the Wyoming Canal will be completed in 1953. Lateral lining will be continued. Drainage investigations and construction will be carried on in the North Pavillion and North Portal areas. Stabilization of the Cottonwood drain by construction of drops and control structures will be started. The definite plan report will be completed in 1953. Farm unit development work on new lands will be continued.

Work proposed, fiscal year 1954

Lateral lining in the North Pavillion and North Portal areas will be completed. Drainage investigations in the North Pavillion and North Portal areas will be continued. Minor farm unit development will be carried out in the North Portal and North Pavillion areas as required by the settlers.

Justification

The small amount of work proposed is necessary for the completion of certain project facilities to furnish water to the new lands to be developed in the third division. The canal and lateral lining program must be continued as programed to benefit project lands by reducing seepage and sustaining production of crops throughout the area.

The total estimated cost of this project has been increased from $24,405,000 to $24,676,000 due to requirement for stabilizing the Cottonwood drain ($100,000) and additional canal lining ($171,000).

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Bull Lake Dam and Reservoir	$1,044,867	$1,044,867			
Pilot Butte Dam and Reservoir	368,595	368,595			
Wind River diversion dam	516,483	516,483			
Wyoming canal:					
1st division, station 0 to 487	1,222,740	1,200,028	$16,500		$6,212
2d division, station 487 to 883	561,076	561,076			
Pilot canal:					
2d division, station 0 to 1841	928,406	928,406			
2d division, station 1841 to end	140,508	140,508			
Wyoming canal, 3d division, station 883 to 1606	2,013,320	1,859,267	84,750	$23,750	45,553
Wyoming tunnel, 3d division, station 1606 to 1659	741,383	731,883		9,500	
Wyoming canal:					
3d division, station 1659 to 2560	1,927,874	1,884,874	28,000	15,000	
3d division, station 2560 to end	780,052	652,652	127,400		
Muddy Ridge Canal, 3d division, station 20 to end	2,396,133	168,576	15,000		2,212,557
Wyoming laterals, 1st and 2d divisions	463,045	463,045			
Pilot laterals:					
2d division, station 0 to 1841	572,996	572,996			
2d division, station 1841 to end	418,996	418,996			
Lost Wells laterals, 2d division	500,181	500,181			
Wyoming laterals:					
3d division, station 883 to 1606	985,478	899,678	63,500	22,300	
3d division, station 1659 to 2560	1,353,118	1,029,118	214,000	70,000	40,000
3d division, station 2560 to end	1,438,000	920,730	25,000		492,270
Muddy Ridge laterals, 3d division	1,703,719	136,526	15,000		1,552,193
Wyoming drains, 1st and 2d division and pilot drain to station 1841	613,237	613,237			
Pilot drains, 2d division, station 1841 to end	2,543	2,543			
Lost Wells drains, 2d division	38,697	38,697			
Wyoming drains, 3d division	1,043,758	267,954	254,084	426,750	94,970
Farm unit development	2,050,468	1,144,034	130,000	95,000	681,434
Development farm	(240,400)	(77,971)	(60,000)	(60,000)	(42,429)
Power facilities	399,728	399,728			
Permanent operation and maintenance camps	146,488	77,703			68,785
Bridges, Five Mile and Muddy Creeks	53,339	53,339			
Communications system	98,041	46,256	20,000		31,785
Other general property	69,344	46,644	5,000	7,700	10,000
Pavillion camp	83,387	83,387			
Total cost	24,676,000	17,772,007	998,234	670,000	5,235,759

Schedule of construction program fiscal years 1953 and 1954—Continued

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
1	2		4	5	6
Construction facilities		483,927	−100,000	−65,000	−318,927
Stores		440,796	−90,000	−100,000	−250,796
Transfers, credits, and other expenditures		104,322	64,502	−30,000	−138,824
Total expenditures	24,676,000	18,801,052	872,736	475,000	4,527,212
Unliquidated obligations		206,463	−206,463		
Total obligations	24,676,000	19,007,515	666,273	475,000	4,527,212
Method of financing:					
Allotment, fiscal year 1953			233,307		
Prior year balance available			432,966		
Allotments required				475,000	4,527,212

Operation and Maintenance

Summarized financial data

Total, fiscal year 1952	$188,679
Allotment fiscal year 1953	[1] 171,600
Total obligations, fiscal year 1953	[1] 171,600
Allotment fiscal year 1954	127,400
Total obligations, fiscal year 1954	127,400

[1] Excludes $45,750 allotted to Riverton project but scheduled under Missouri River Basin for integrated power operation.

Justification of estimate

Location

The Riverton project is located in Fremont County, Wyo., on the ceded portion of the Wind River Indian Reservation. It lies near the center of the Wind River Basin, north and northwest of the town of Riverton, population 4,100.

General conditions

This project was authorized by the Secretary of the Interior on June 19, 1918, under the terms of the Indian Appropriation Act for fiscal year 1919 approved by Congress on May 25, 1918. The project was placed under the jurisdiction of the Bureau of Reclamation by the act of June 5, 1920. Construction began June 19, 1920, and the first water was available for the irrigation season in 1925. The Pilot Butte powerplant began generation in 1922 and a second unit was installed in 1929.

The water supply for the project is obtained from the natural flow of the Wind River, supplemented by Bull Lake Reservoir.

Irrigation facilities of the first and second divisions have been operated by the Midvale Irrigation District since January 1, 1951, and the third division is operated by the United States with directly appropriated funds. The land of the third division during a 10-year development period will be served by water on a rental basis during which time the total water charges collected will cover operation and maintenance costs. Power facilities are operated from appropriations of the project power revenues.

The Midvale Irrigation District, under the terms of its contract, operates and maintains the joint works, including Bull Lake and Pilot Butte Reservoirs, diversion dam, Wyoming Canal, first and second division, as well as the distribution and drainage systems serving approximately 48,000 acres within the irrigation district. The United States operates the Pilot Butte powerplant, the Wyoming Canal, third division, and the distribution and drainage system serving 14,000 acres for which water will be available in 1953, and 20,000 acres in 1954.

The United States reimburses the irrigation district for the actual costs incurred in the delivery of water through the joint works to the Pilot Butte power plant and the third division. The United States also furnishes the district

on a reimbursable basis an irrigation manager who is experienced in the operation of the works assumed by the district.

Power facilities include the Pilot Butte powerplant with a rated capacity of 1,600 kilowatts, 89 miles of 34.5-kilovolt transmission lines, four substations, several metering installations, a telephone system, a fixed and mobile radio communication system, and the electrical distribution systems in the Pavillion and Pilot Butte government camps. Power and Midvale Irrigation District jointly operate and maintain the first division of the Wyoming Canal, the Wind River diversion dam, and Pilot Butte and Bull Lake Reservoirs.

For approximately 2 months each year it is necessary to clear ice at the Diversion dam and at the powerplant in order to maintain an adequate supply of water to the powerplant to insure continual operation. This is an expensive procedure, but due to the shortage of power in the area, it has been imperative that the Pilot Butte powerplant operate continuously. The plant has a rated capacity of 1,600 kilowatts, but averaged over 1,800 kilowatts for the fiscal year 1952, and often operated over 2,000 kilowatts.

Because of the necessity of maintaining a full crew for the operation of such a small powerplant on a 24-hour schedule, and the high cost of operating and maintaining the joint facilities, the operation and maintenance expenses of the Pilot Butte powerplant are much higher per kilowatt or per kilowatt-hour than for the average Government hydroelectric powerplant. Nevertheless, the plant does pay for itself, and supplies vital power in an area without adequate sources. After Boysen powerplant is in operation, it will be possible to decrease operating costs of Pilot Butte powerplant by converting to semiautomatic operation, reducing the number of operators, and by closing down the plant during the 1 or 2 months of most severe icing conditions.

For several years the Pilot Butte powerplant has been able to supply less than half of the power requirements of its market area, and some of the additions to substations and transmission lines have been made from the Missouri River Basin funds. On July 1, 1952, Missouri River Basin project, transmission division, began operatin and maintenance of all transmission facilities of the Colorado-Wyoming-Nebraska interconnected system which includes the market area of Riverton project, and will do the marketing of power, all as the agent of the various projects involved. The various projects will continue to operate their own power plants, and be paid by allocations of power sales revenues. Estimates of revenues for Riverton project for future years will therefore not be comparable with historical gross revenues, since previous revenues included sales of purchased power as high as 55 percent of the total sales, and cost of this purchased power was met from the gross revenues.

The net generation of Pilot Butte powerplant during fiscal year 1952 was 15,877,190 kilowatt-hours and purchased energy was 18,695,076 kilowatt-hours, making a total energy requirement for the system 34,582,266 kilowatt-hours. With system losses deducted, energy sales were 32,632,194 kilowatt-hours and total revenues from sales of power and other sources were $199,575.75. Decrease in power requirements for construction of Boysen Dam more than offset the large (10-percent) growth in other loads, so total revenue was lower by about $1,600 than for the previous fiscal year.

Work proposed, 1954

	Program, 1954	Increase (+) or decrease (−), from 1953
IRRIGATION FACILITIES		
Storage system	$788	+$18
For the reimbursement of the Midvale Irrigation District for the 3d division's share of the cost incurred by the district in the operation and maintenance of the storage system.		
Carriage system	9,675	+2,414
Of this amount, $3,000 is required to reimburse the Midvale Irrigation District for the 3d division's share of the normal operation and maintenance of the carriage system. The balance will be required for the normal operation and maintenance by Government forces of the 3d division carriage works, including 17 miles of new canal.		
Distribution system	23,400	+5,465
Continuation of normal operation and maintenance activities on the 3d division, including 15 miles of new laterals serving 6,000 additional acres.		
Drainage system	2,250	+1,150
This increased amount will be required to continue maintenance activities for the 3d division, due to the expanding mileage of drains.		
Replacement and improvements	28,687	−23,247
Improvement to operation and maintenance roads for new distribution system on Cottonwood Bench, stabilization at lateral banks and structures, replacement of 3 pickups and miscellaneous equipment.		
Total obligations, irrigation	64,800	−14,200
POWER FACILITIES		
Electric generation	55,600	−14,000
For normal operation and maintenance of Pilot Butte powerplant. Decrease for reduction in number of operators at plant after conversion to semiautomatic operation.		
Other production expense		
No purchase of power. System has been integrated and market area of Riverton transferred to Missouri River Basin project.		
Replacements and improvements	7,000	−16,000
For normal capitalized expenses to be expected during the year. Decrease since funds were provided for conversion to semiautomatic operation of the power plant in fiscal year 1953, but no fund provided for that purpose in fiscal year 1954.		
Total obligations, power	62,600	−30,000
Total obligations, all facilities	127,400	−44,200

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
IRRIGATION FACILITIES			
Operation and maintenance:			
Storage system	$326	$770	$788
Carriage system	7,970	7,261	9,675
Distribution system	7,511	17,935	23,400
Drainage system	691	1,100	2,250
Replacements and improvements	39,006	51,934	28,687
Total obligations, irrigation	55,504	79,000	64,800
POWER FACILITIES			
Operation and maintenance:			
Electric generation	63,664	69,600	55,600
Transmission and distribution expense	20,114	----------	----------
Replacements and improvements	49,397	23,000	7,000
Total obligations, power	133,175	92,600	62,600
Total obligations, all facilities	188,679	[1] 171,600	127,400
Allocations:			
Irrigation	55,504	79,000	64,800
Power	133,175	[1] 92,600	62,600
Total obligations	188,679	[1] 171,600	127,400
Method of financing:			
Allotment	216,860	[1] 171,600	----------
Unobligated balance	−28,181	----------	----------
Allotment required	----------	----------	127,400

[1] Excludes $45,750 allotted to Riverton project but scheduled under Missouri River Basin project for integrated power operation.

Project statistics

Feature or item	Unit	Actual, fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
Irrigation system:				
Irrigable area:				
Full irrigation	Acres	61,299	67,000	73,000
Supplemental	do	1,945	2,000	2,000
Total	do	63,244	69,000	75,000
Cultivated area (total)	do	52,026	67,000	70,000
Gross crop value of project acreage[1]	Dollars	2,222,794	2,537,000	2,450,000
Average crop value per acre	do	43	38	35
Storage dams and reservoirs	Number	2	2	2
Diversion dams	do	1	1	1
Canals	Mile	82	87	101
Laterals	do	330	335	350
Drains	do	168	176	200
Telephone lines	do	66	66	66
Operating roads	do	302	302	332
Power system:				
Annual sales	Kilowatt-hour	32,632,194	[2]	[2]
Total power revenues	Dollar	180,996	[2]	[2]
Power plants	Number	1	1	1
Plant capacity	Kilowatt	1,600	1,600	1,600
Patrol roads	Mile	56	56	56
Transmission lines	do	89	89	89
Substations	Number	4	4	4

[1] Includes entire Riverton project.
[2] Power revenues and sales are shown under Missouri River Basin integrated power operation statistics.

Mr. JENSEN. You are asking for $475,000 for that project for fiscal 1954. That project is nearing completion; is it not?

Mr. LINEWEAVER. It is about 70 percent completed, but we have been running into difficulties there, Mr. Chairman, and we have slowed down the construction program until we can get some more accurate information as to the potential productivity of the land. The major portion of those funds will be used for constructing drains and continuing investigations in the North Portal and North Pavillion areas, and the lining of the Wyoming canal will be continued. Some funds will be used for the settlement work in the North Portal and North Pavillion areas.

Mr. JENSEN. You have some operation and maintenance on that in the amount of $127,400?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. You might include that in your statement.

Mr. LINEWEAVER. I will put in a statement on the settlement and development work, as well as operation and maintenance.

(The matter referred to follows:)

CONSTRUCTION AN REHABILITATION, RIVERTON PROJECT, WYOMING

The Riverton project is one of the older projects of the Bureau and is approximately 70 percent complete. New divisions of the project are brought under irrigation as investigations and demands show the necessity therefor. Construction will not be initiated on any new divisions in fiscal years 1953 or 1954. Under operating conditions the canals and laterals of the project developed seepage in some areas that required lining to prevent excessive losses. Drainage requirements become apparent after water is put on the land and drains must be built immediately to save growing crops. More than 11,200 acres of the project lands have been affected and require dmainage correction. The drainage program is carried on continuously during the development of the project.

The major portion of the funds requested for fiscal year 1954 will be used in constructing drains and continuation of investigations in the North Portal and North Pavillion areas. Lining of the Wyoming canal and laterals will be continued and some funds will be used for settler development work in the North Portal and North Pavillion areas and for operation of the development farm.

SETTLEMENT AND DEVELOPMENT PROGRAM, RIVERTON PROJECT, WYOMING

In 1948, 55 public land farm units on the Riverton project were opened for settlement while 54 farm units were opened in 1951. No additional land openings on this project are contemplated during 1954.

Serious drainage problems which have materially affected the productivity of some of the farms have arisen on parts of the project. Canals are being lined and drains constructed to alleviate the drainage situation. In addition, arrangements have been made through a memorandum of understanding with the University of Wyoming whereby the services of an assistant county agent are made available to give special assistance to settlers in the solution of their problems. Pending legislation, if enacted, would permit settlers whose land has been seriously damaged by seepage to exchange their inadequate units for new units.

Additional information on irrigation methods as well as cropping and cultural practices applicable to lands in the third division is required before additional public lands in that division are opened to entry. A development farm has been established on the third division. Through agreement with the University of Wyoming an extensive research program will be conducted by the university on the development farm in order to obtain the information needed to advise with settlers as to irrigation methods and cultural practices.

OPERATION AND MAINTENANCE, RIVERTON PROJECT, WYOMING

The Riverton project is located in Fremont County, Wyo., on the ceded portion of the Wind River Indian Reservation. The water supply for the project is obtained from the natural flow of the Wind River, supplemented by Bull Lake Reservoir.

Irrigation facilities of the first and second divisions have been operated by the Midvale Irrigation District since January 1, 1951, and the third division is operated by the United States with directly appropriated funds. The land of the third division during a 10-year development period will be served by water on a rental basis during which time the total water charges collected will cover operation and maintenance costs.

The Midvale Irrigation District, under the terms of its contract, operates and maintains the joint works, including Bull Lake and Pilot Butte Reservoirs, Diversion Dam, Wyoming Canal, first and second division, as well as the distribution and drainage systems serving approximately 48,000 acres within the irrigation district. Irrigation facilities operated and maintained by the Bureau of Reclamation included the Wyoming Canal, third division, and the distribution and drainage system serving 14,000 acres for which water will be available in 1953, and 20,000 acres in 1954. An appropriation of $64,800 is requested for irrigation operations during fiscal year 1954. This is a decrease of $14,300 from fiscal year 1953.

Riverton Development Farm

Cottonwood Bench, an area of 10,626 acres, is a part of the third division of the Riverton project. The land classification shows that the soil is predominately loamy sand and sand in texture. They contain 85 to 90 percent sand in the topsoil and have a moderate lime layer at 36 to 48 inches in depth. The soils are deficient in water-holding capacity in the top 6 inches, but retain sufficient moisture in a 4-foot profile to normally meet plant-growth requirements. It has excellent topography and from this standpoint is well adapted to irrigation. The main canal has been completed and laterals constructed to serve 6,409 acres.

Early in the development of the Riverton project it was recognized that the sandy soils on the Cottonwood Bench area presented special problems such as water retention, fertility, water application, wind erosion, crop establishment, and ditch stabilization.

From the Bureau's past experience it was determined that a development farm would be very valuable in helping solve some of these problems. With this in mind a regular development farm of 160 acres was established in 1951. The Bureau operated 80 percent of the unit for demonstration purposes, using the best known farming practices and 20 percent was set aside for research conducted by the cooperating agencies, the University of Wyoming and the Bureau of Plant Industry. In spite of these efforts employing the best knowledge and experience available, there was almost a complete failure in 1951 and near failure in 1952.

These failures have caused considerable concern and resulted in the necessary decision to postpone settlement of Cottonwood Bench until it could be definitely determined if crops could be successfully grown on the area and methods of crop production and cultivation developed.

Conferences were held with representatives of the cooperating agencies and it was decided that it would be necessary to make a special intensive study of the area. A contract has been prepared which, when completed will enable the University of Wyoming, Bureau of Plant Industry, and the Bureau of Reclamation to cooperate in conducting intensive field trials on 35 acres of the farm and research activities on approximately 10 acres.

The program will be geared to the pressing need for a decision on future construction program of the third division. It will include intensive research by the Bureau of Plant Industry and University of Wyoming in fertilizer requirements, depths, rates and time of seeding, erosion control, mulching practices, and an irrigation study comparing the efficiencies of sprinkler and gravity irrigation. The program calls for an answer on suitability by the end of calendar year 1954. This answer will include a decision on the future development of this area.

Throughout the Riverton project a considerable number of farm units opened to public entrymen, mainly veterans, are now inadequate due to poor drainage conditions and soil deterioration. Senate bills 199 and 887 introduced into the present Congress provide for the exchange of these inadequate units and for the improvement of others by amendment. They also make it possible to increase the homestead limitation to 320 acres. If the bill is passed it is expected that a large portion of the lands on Cottonwood Bench will be absorbed by the present entrymen on the Riverton project who now hold inadequate units.

It is especially important that the requested funds be allowed for the operation of the Riverton development farm because the decision as to the feasibility of the settlement of the Cottonwood Bench, as well as the final determination of irrigable acres and approval of the land classification, is dependent upon the results obtained on the farm. Still more important, however, is the possibility that through the intensive program proposed methods will be developed which will enable the farm units to become financially successful homes.

Budget request—Riverton Development Farm

Bureau operation Jan. 1 to June 30, 1953:	
Farm operator, 6 months	$2,720
Laborers (2), 3 months	1,400
Canal lining, structure and ditch repair	6,800
Leveling	200
Windbreak materials	700
Fertilizer	2,400
Seed	200
Equipment depreciation	5,000
Mileage	1,200
Travel	300
Soil laboratory building	1,000
Fencing	500
Miscellaneous materials and supplies	1,440
Indirect charges	11,000
Special study equipment	5,000
Additional farm equipment	5,000
Total	44,860
Research operations Jan. 1 to June 30, 1953:	
Project leader GS–11, 5 months	2,200
Irrigation engineer GS–11, 4 months	1,550
Soil scientist (laboratory) GS–7, 3 months	1,050
Soil scientists (2), GS–5, 3 months	1,710
Laborers (3), 3 months	2,200
Clerk stenographer, GS–2	690
Fertilizer, seed, laboratory supplies, and miscellaneous	2,000
Travel	700
Total	12,100
Bureau operation July 1, 1953, to June 30, 1954:	
Farm operator, 12 months	5,435
Laborers (2), 7 months	3,360
Lateral lining and structures repair	1,000
Fertilizer	1,200
Windbreak material	200
Seed	400
Mileage	2,500
Equipment depreciation	5,500
Soil laboratory services	500
Miscellaneous materials and supplies	1,305
Indirect charges	11,000
Total	32,400
Research operations July 1, 1953, to June 30, 1954:	
Project leader, GS–11, 12 months	5,500
Irrigation engineer, GS–11, 12 months	4,750
Soil scientist (laboratory), GS–7, 12 months	4,205
Soil scientist (2) GS–5, 12 months	6,820
Laborer (1), 9 months	2,125
Fertilizer, seed, laboratory supplies, and miscellaneous	3,000
Travel	1,200
Total	27,600

The above amount of $27,600 is available from Riverton project funds. In addition, $4,000 of cooperative survey funds available if needed, making total of $31,600. Budget will be revised and Bureau funds scaled down if money is made available to Bureau of Plant Industry for fiscal year 1954.

Total amount requested fiscal year 1953, $60,000; and for fiscal year 1954, also $60,000.

OPERATION AND MAINTENANCE OF POWER FACILITIES

Mr. MCPHAIL. I also have a statement on the operation and maintenance of the power facilities.

Mr. JENSEN. We will receive it for the record.

(The matter referred to is as follows:)

OPERATION AND MAINTENANCE, RIVERTON PROJECT, WYOMING, POWER FACILITIES

The Riverton project is located in Fremont County, Wyo., on the ceded portion of the Wind River Indian Reservation.

An allotment of $62,600 is requested in fiscal year 1954 for the normal operation and maintenance of the pilot Butte powerplant and switchyard, which has an installed generating capacity of 1,600 kilowatts.

The allotment request for fiscal year 1954 is $30,000 less than that required for fiscal year 1953. This is due to the conversion of the pilot Butte powerplant from manual to semiautomatic operation.

The expense of operation and maintenance of the transmission lines and substations is included with the allotment request of the Missouri River Basin project.

CONSTRUCTION AND REHABILITATION

REHABILITATION AND BETTERMENT OF EXISTING PROJECTS

Mr. JENSEN. With reference to the rehabilitation and betterment projects, we will place in the record at this point pages 459–462 of the justification. Will you insert a statement on each project?

Mr. LINEWEAVER. Yes, sir; we will do that.

(The information requested is as follows:)

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations		$29,645,909
Total obligations to June 30, 1952		10,050,824
Allotment, fiscal year 1953	$1,799,974	
Prior-year balance available	[1] 870,828	
Balance available in subsequent year	—124,487	
Total obligations, fiscal year 1953		2,526,315
Allotment, fiscal year 1954	$2,500,000	
Prior-year balance available	124,487	
Total obligations, fiscal year 1954		2,624,487
Balance to complete		14,444,283

[1] Includes $102,980 rehabilitation and betterment funds reallocated in fiscal year 1952 for emergency flood and storm repair which will be returned in fiscal year 1953.

JUSTIFICATION OF ESTIMATE

Authorization

Rehabilitation and betterment work on existing projects was authorized by the act of October 7, 1949 (63 Stat. 724), amended by the act of March 3, 1950 (64 Stat. 11).

Location

The program for fiscal year 1954 embraces rehabilitation and betterment work on 10 reclamation projects located in 8 of the 17 Western States. The States in which work is proposed are: Arizona, Idaho, Montana, Nebraska, Oregon, South Dakota, Washington, and Wyoming.

Description

The rehabilitation and betterment program was initiated by a series of surveys made with general investigation funds in 1947 and 1948. The surveys included 51 Bureau of Reclamation projects or units of projects, on which construction was initiated as far back as 1906. It was found that many structures had far exceeded their useful life and, because of the many changes in land use, methods of irrigation, and types of crops raised, it was apparent that the irrigation facilities must not only be rehabilitated but that betterments were needed to place the older projects on a basis comparable to projects now being constructed. Where extensive rehabilitation is necessary, the amount of such work that can be accomplished in any one year depends in many cases upon the length of time available between irrigation seasons.

Repayment

In accordance with the authorizing act, provision for full reimbursement must be completed before rehabilitation and betterment activities are initiated.

Status

As a result of the 1947–48 surveys, those projects most urgently needing rehabilitation and betterment assistance were selected for initial participation in the program. Nine projects received allotments from the first year's appropriation for this work in fiscal year 1949 and some of the most necessary rehabilitation and betterment was accomplished.

Additional projects have been added from year to year as the need has arisen, and as repayment arrangements have been completed. To June 30, 1952, a total of a little over $10 million had been expended for work on 14 projects. The fiscal year 1953 program now in progress includes work on 12 projects totaling $2,526,315.

The overall rehabilitation and betterment program is now comprised of 16 projects and an entry for additional projects. Of the total of 16 projects, work on 2 projects has been completed and work on 4 additional projects will be completed in 1953. One project has been added to the program for fiscal year 1954. The entry for additional projects represents the anticipated remaining rehabilitation and betterment work which cannot be accurately identified with specific projects at this time.

Work proposed, fiscal year 1954

Rehabilitation and betterment work on 10 projects will be carried on during the year. This work will include replacement of obsolete or deteriorated structures and the improvement of facilities not presently adequate to meet current requirements. Typical examples of the work to be undertaken during the fiscal year to accomplish the rehabilitation and betterment program are: Replacement of timber structures, resolution of drainage problems, placing rock riprap for canal-bank stabilization, placement of canal and lateral linings, installation of measuring devices, and other work incident to more efficient operation.

Justification

The fiscal year 1954 program is essential to prevent the continued excessive loss of valuable water and consequent reduction in benefits to be derived by the application of such water to productive lands. Rehabilitation and betterment is equally necessary on other projects in order to restore project facilities to good operating conditions. Accomplishment of the rehabilitation and betterment program will serve to protect the Federal investment in these projects and will constitute a substantial contribution to national defense in that production of food and fiber on the project lands will be maintained at a maximum while manpower requirements will be held to a minimum. On some multiple-purpose projects, such as the North Platte and Riverton projects, where facilities are used jointly for irrigation and power, power production has benefited indirectly by this program.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Salt River project, Arizona	$6,000,000	$2,734,764	$1,000,236	$750,000	$1,515,000
Orland project, California	245,638	245,638			
Grand Valley project, Colorado	1,627,753	1,623,753	4,000		
Boise project, Idaho	1,284,729	499,729		735,000	50,000
Bitter Root project, Montana	82,036	37,019	2,017	43,000	
Milk River project, Montana	856,253	350,253	180,000	220,000	106,000
Sun River project, Montana	39,724	33,724	6,000		
North Platte project, Nebraska-Wyoming	8,175,000	1,507,271	626,080	570,000	5,471,649
Umatilla project, Oregon	25,000			25,000	
Vale project, Oregon	50,000	50,000			
Klamath project, Oregon-California	65,000		65,000		
Belle Fourche project, South Dakota	629,193	366,945	8,248	4,000	250,000
Okanogan project, Washington	124,000	4,520	90,480	29,000	
Yakima project, Washington	821,631	766,150	55,481		
Riverton project, Wyoming	1,950,952	1,463,419	342,412	118,487	26,634
Shoshone project, Wyoming	669,000	367,639	146,361	130,000	25,000
Additional projects	7,000,000				7,000,000
Total obligations	29,645,909	10,050,824	2,526,315	2,624,487	14,444,283
Method of financing:					
Allotment, fiscal year 1953			1,779,974		
Prior year balance available			[1] 870,828	124,487	
Balance available in subsequent year			−124,487		
Allotments required				2,500,000	14,444,300

[1] Includes $102,980 rehabilitation and betterment funds reallotted in fiscal year 1952 for emergency flood and storm repair which will be returned in fiscal year 1953.

Statement on Rehabilitation and Betterment Program Completed, Under Way, or Proposed for Construction in Fiscal Years 1953 or 1954

GENERAL STATEMENT

During the depression years and the war that followed, it was necessary to defer a substantial amount of repair and maintenance work on completed Bureau projects which would normally have been accomplished as part of the regular operation and maintenance activity. After the war it was found that in many cases the project facilities had been allowed to depreciate to the point where excessive operation and maintenance costs and reduced crop production were threatening the feasibility of the project and the Federal investment in project facilities. The task of placing these projects back on a safe operating footing was in most cases beyond the ability of the project water users to finance on a strictly current basis. As a result the rehabilitation and betterment program was authorized by the act of October 7, 1949 (63 Stat. 724). This act provides, in part, that expenditures of funds appropriated for the rehabilitation and betterment of irrigation systems on Federal reclamation projects "* * * shall be made only after the organizations concerned shall have obligated themselves for the return thereof in installments fixed in accordance with their ability to pay, as determined by the Secretary of the Interior in the light of their outstanding repayment obligations, and which shall, to the fullest practicable extent, be scheduled for return with their construction charge installments or otherwise scheduled as he shall determine. No such determination of the Secretary of the Interior shall become effective until the expiration of 60 days after it has been submitted to the Committee on Interior and Insular Affairs of the Senate and the Committee on Public Lands of the House of Representatives."

Prior to the expenditure of any of the rehabilitation and betterment appropriations, the requirements of Public Law 335 have been met by entering into contracts with the irrigation districts concerned for the repayment of the cost of the rehabilitation and betterment work. The Senate and House Committees on Interior and Insular Affairs have in every case been advised by the Secretary of the Interior and have approved his findings concerning the water users' ability to pay and the proposed schedule of rehabilitation and betterment reimbursement.

By enactment of Public Law 451, 81st Congress, 2d session, approved March 3, 1950, the language of Public Law 335 requiring a 60-day waiting period before the Secretary's findings could become effective was modified, in part, as follows:

"* * * any such determination may become effective prior to the expiration of such 60 days in any case in which each such committee approves an earlier date and notifies the Secretary, in writing, of such approval: *Provided*, That when Congress is not in session the Secretary's determination, if accompanied by a finding by the Secretary that substantial hardship to the water users concerned or substantial further injury to the project works will result, shall become effective when the chairman and ranking minority member of each such committee shall file with the Secretary their written approval of said findings."

Salt River project, Arizona, estimated total obligations, $6,000,000.

The Salt River project, located in Maricopa County in central Arizona, includes storage reservoirs, diversion dams, and related irrigation facilities to serve approximately 240,000 acres of land. The project has been in operation since 1907.

The work to be accomplished under the program for the Salt River project consists of the repair of existing pumping plants including the changeover of all pumps from 25-cycle to 60-cycle operations; cleaning and deepening of and installation of new casings in existing wells; installation of canal and lateral lining to conserve water; replacing of canal and lateral structures, many of which were constructed of wood; replacement of open ditches with pipelines; and repair of spillways on the dams. By the end of the current year the program on this project will be about 60 percent complete and funds are requested for fiscal year 1954 to complete the rehabilitation work on the storage and diversion dams and to continue rehabilitating, redrilling, and reequipping deep wells for 60-cycle operations and installing lateral lining.

The total cost of this work will be repaid in full by the water users over a 20-year period. Repayment contracts have been executed with the Salt River Valley Water Users' Association, which will adequately cover all expenditures through the current fiscal year. Negotiations are presently under way for the execution of a repayment contract to cover fiscal year 1954 expenditures based on findings approved by the House and Senate Committees in March 1950 and additional contracts will be executed in future years to insure the full return of future expenditures within this $6,000,000 program.

The need for the rehabilitation and betterment program is the result of an accumulation of obsolescent project works, most of which have been in operation for 30 to 40 years, and a progressive lowering of the ground-water table in the face of rising operating costs. This rehabilitation work is required to improve overall efficiency of operation, to reduce maintenance costs, to conserve surface water, and to restore deep-well production lost through lowering of the ground-water table. In addition, the electrical power frequency within the entire irrigated area is being changed from 25 to 60 cycles, and it is necessary that rehabilitation of project wells and pumps be continued in coordination with the power frequency change program. Failure to complete the remaining work will result in progressively increasing operation and maintenance costs and manpower requirements and will permit continuation of the waste of the surface-water supply and loss of existing ground-water resources.

Orland project, California, total estimated obligations, $245,638

The Orland project, located in north-central California, provides irrigation water for aprpoximately 20,000 acres of land.

Work on this project consisted of repairs to mechanical equipment at the Stony Gorge Dam, replacing irrigation structures that had been used for many years, repairing and placing additional lining in canals to conserve water and prevent further seepage, and placing wells for pumping from the ground-water table to prevent further waterlogging of the land and to supply additional water for irrigation purposes. All of this work has now been completed and no further expenditures are contemplated.

Existing repayment arrangements with both the individual water users on the Orland project and the Orland Unit Water Users' Association fully insure the return to the Government of the entire cost of this work. In addition to the assurance of repayment pursuant to the provisions of the contracts with the individual water users, the contract between the United States and the Orland Unit Water Users' Association, executed on April 3, 1909, contains a provision whereby the association guarantees the payment to the United States of the cost

of operation and maintenance as assessed from year to year by the Secretary of the Interior. The operation and maintenance charge announced annually by the Secretary during the 20-year repayment period will include a component to provide for the repayment of up to $250,000 of rehabilitation and betterment expenditure. Thus, reimbursement to the United tSates for advances for rehabilitation is made an obligation of the water users' association as well as of the individual water users.

Grand Valley project, Colorado, total estimated obligations, $1,627,753

The Grand Valley project, located in west-central Colorado, includes facilities for the irrigation of about 49,000 acres of land and the generation of 3,000 kilowatts of electrical power.

The rehabilitation and betterment work on this project consisted of the relocation and lining of 2,200 feet of tunnel on the high line canal and the replacement of structures on the high line canal and lateral system. All of this work has now been completed.

On March 5, 1951, a supplemental repayment contract was executed with the Grand Valley Water Users' Association, which provided for the repayment of up to $1,900,000 for rehabilitation and betterment work.

Boise project, Idaho, total estimated obligations, $1,284,729

The Black Canyon Dam, located in the Payette River about 8 miles northeast of Emmett, Idaho, is a reinforced concrete structure, storing and diverting water for the generation of 10,000 kilowatts of electrical power, and the irrigation of some 71,000 acres of land.

This work consists of the rehabilitation and betterment of the dam, including correcting serious erosion at the toe of the dam, drilling of drainage holes to relieve uplift pressures, strengthening the foundation below the spillway toe, refacing of the downstream face of the dam, and changes in slope of the present railroad grade along the shore. In the course of investigations, it was determined that an emergency situation existed and an allotment of $500,000 of emergency funds was made to undertake the most urgent work. With these funds, all work has been completed with the exception of the refacing of the downstream face of the dam and correction of the railroad grade. The remaining work is scheduled to be initiated in fiscal year 1954.

Negotiations are presently under way with the project water users leading to the execution of an amendatory repayment contract which will include provisions for the full return of the cost of the rehabilitation work already performed with emergency funds. Negotiations are also under way on repayment contract provisions covering the cost of the remaining work which is now scheduled to start in fiscal year 1954 with rehabilitation and betterment funds after satisfactory repayment arrangements have been completed.

The Black Canyon Dam is a key structure of the irrigation and power systems of the Boise project. While the most urgent work has already been performed with emergency funds, considerable work still remains to be accomplished to place the structure in a safe and efficient operating condition. To delay this work will prove costly because of the high operation and maintenance costs and continued deterioration. It could also prove disastrous as failure of the dam would not only prevent the diversion of water to serve some 76,000 acres of land and the generation of 10,000 kilowatts of electrical power but it would also result in considerable loss of life and property.

Bitter Root project, Montana, total estimated obligations, $82,936

The primary purpose of the Bitter Root project is to provide a full water supply for the irrigation of 16,665 acres of land located in western Montana.

The rehabilitation and betterment work on this project consists of raising the height of the dam approximately 3 feet and riprapping the upstream face with rock, enlarging the main canal, rehabilitating 2 steel siphons, and placing earth blankets in short stretches of the main canal. By the end of the current fiscal year, all work on the canals and conduits will have been completed, and the program for fiscal year 1954 provides for the issuance of plans and specifications, award of contract, and the completion of work on the raising and riprapping of the dam.

The repayment of the cost of rehabilitation and betterment work on the Bitter Root project is provided for in the basic amendatory construction repayment contract executed May 23, 1949, with the Bitter Root Irrigation District. Under this contract the actual cost of rehabilitation and betterment work up to $100,000 is merged with the district's construction repayment obligation.

The Lake Como Dam, which has been in operation since 1910, does not at the present time have sufficient freeboard to meet the minimum safety requirements recommended by the Bureau of Reclamation. Deferral of the remaining work on this project, which is essential to place the dam in safe operating condition, could prove costly not only because of the loss of production on the 16,000 acres of land within the project but also because of the loss of life and property resulting from overtopping and failure of the structure.

Mills River project, Montana, total estimated obligations, $856,253.

The Milk River project, located in north-central Montana, comprises the facilities for delivering water to about 123,000 acres in the Chinook, Malta, and Glasgow divisions.

The rehabilitation and betterment program now under way on the Milk River project consists of the relocation of a section of the St. Marys Canal, which is a part of the joint works supplying water to the entire project, and the repair and rehabilitation of the diversion dams, canals, laterals, and drainage facilities on the Malta and Glasgow divisions. By the end of the current fiscal year the St. Marys Canal relocation will be completed. Work on the diversion dams, canals, laterals, and drains on the Glasgow division will be about 77-percent complete and a similar program on the Malt division will be about 42-percent complete. Funds are requested for fiscal year 1954 to continue this rehabilitation and betterment program with the object of completing it the following fiscal year.

The return in full of the total cost of the rehabilitation and betterment work on the Milk River project, most of which is assignable to the Malta and Glasgow divisions, is provided for in amendatory repayment contracts dated September 10, 1952, with the Malta and Glasgow irrigation districts. The balance of the cost of this program, which is chargeable to the Chinook division, for work on the joint facilities is covered in repayment contracts with the five irrigation districts comprising that division.

The initial delivery of water on the Milk River project was made in 1911. Since that time many of the irrigation facilities on this project has become badly deteriorated and, due to excess seepage, a substantial amount of the project land has been withdrawn from production. Full production from this withdrawn land, as well as other lands adversely affected by waterlogging, cannot be realized until the present rehabilitation and betterment program is completed. In order to place the entire project in an efficient and economical operating condition, it is essential that this work continue as schedule.

Sun River project—Fort Shaw division, Montana, total estimated obligations, $39,724.

The Sun River project, located in north-central Montana, comprises the facilities to deliver water to approximately 13,900 acres of land.

The rehabilitation and betterment work on this project consists entirely of the construction of drainage ditches and structures. At the present time this work is substantially completed and all activities are to be terminated by the end of the current fiscal year.

A repayment contract, which was approved by the Congress on June 12, 1951, with the Fort Shaw irrigation district provides for repayment to the Government of the entire cost of the rehabilitation work on this project.

North Platte project, Nebraska-Wyoming, total estimated obligations, $8,175,000.

The existing North Platte project, located in eastern Wyoming and western Nebraska, includes the facilities for delivering water to 331,000 acres of farm land and the generation of 6,200 kilowatts of electrical power.

The rehabilitation and betterment program on the North Platte project consists primarily of improvements and repairs to the Pathfinder Dam, installation of canal and lateral lining, and repair and rehabilitation of drainage facilities. By the end of the current fiscal year, all work will have been completed on the rehabilitation of the Pathfinder Dam and Reservoir, and the project program will be about 25-percent complete. The funds requested for fiscal year 1954 will provide primarily for a continuation of the installation of canal and lateral lining.

The repayment in full of the cost of rehabilitation and betterment work on the North Platte project is insured by existing repayment contracts with the water users. The major portion of these costs will be repaid under amendatory construction repayment contracts dated September 22, 1952, with the Gering, Fort

Laramie, Goshen, and Pathfinder Irrigation Districts. A minor portion of the cost of this program is covered by repayment contracts with the Pathfinder and North Port irrigation districts as well as with Warren Act contractors and other water users.

The North Platte project has been in operation since 1908, and since that time many of the irrigation facilities have become very badly deteriorated with a resultant increase in operation and maintenance costs. In addition, seepage from canals and laterals has increased very noticeably in recent years, resulting in substantial damage to adjacent farmlands and the loss of valuable irrigation water. Approximately 35,000 acres of land formerly in a repayment obligation classification have now been placed in class 5 because of seepage. In order to place the project back in an efficient and economical operating condition which will protect the Government's investment in the project and the full return of that investment, it is essential that the rehabilitation and betterment program be continued as presently scheduled.

Umatilla project, Oregon, total estimated obligated, $25,000

The Umatilla project, located in Umatilla and Morrow Counties, Oreg., provides a full water supply for approximately 34,000 acres of land.

The rehabilitation and betterment program for this project consists of the replacement of 4 miles of badly damaged concrete lining in the main canal for the Hermiston irrigation district. The present schedule provides for the start and completion of this work in fiscal year 1954.

Repayment of the proposed $25,000 rehabilitation and betterment expenditure on the Umatilla project is provided for in the amendatory repayment contract executed September 9, 1952, with the Hermiston irrigation district. Submission of this contract to the appropriate congressional committees is scheduled to be accomplished during the current session.

The existing concrete lining in the main canal of the Umatilla project has been in place for about 30 years and has become so badly disintegrated as to endanger the use of the canal. The failure of the main canal would, of course, preclude delivery of irrigation water, and if it occurred at the height of the irrigation season, could result in the loss of an entire crop. In addition, a considerable amount of valuable irrigation water is lost through seepage. It is therefore essential that this old lining be replaced as rapidly as possible to insure the continued availability of water for the 34,000 acres of this project.

Vale project, Oregon, total estimated obligations, $50,000

The Vale project, located in west-central Oregon, includes the irrigation facilities to serve approximately 32,000 acres of land.

The rehabilitation and betterment work for this project consisted solely of the replacement of river crossing and other badly deteriorated pipelines. These lines were replaced with concrete and steel pipes and the exceessive maintenance required for the operation of the old lines has been eliminated.

The basic amendatory repayment contract dated April 11, 1949, provides for the repayment of not to exceed $50,000 to cover the cost of rehabilitation and betterment work on the Vale project.

Klamath project, Oregon-California, total estimated obligations, $65,000

The Klamath project, located in south-central Washington and north-central California, comprises the facilities for the irrigation of about 244,000 acres of land.

The rehabilitation and betterment program on this project is confined to the Langell Valley division where it is proposed to install 3 pumping plants, 1 of which will replace an outmoded hydraulic pump; enlarge one-half mile of the Upper Dry Lake lateral; and enlarge and improve the upper sections of the North Canal, the East Canal, and the E–1 and E–1–a laterals. No work has been accomplished to date on this program which is scheduled to be undertaken and completed this fiscal year.

Negotiations are presently under way leading to the execution of a repayment contract covering the cost of this work and no expenditures will be made until this repayment contract has been executed and approved.

Further irrigation development in this division and more intensified cropping has overtaxed the available water supply under the present operations. The rehabilitation and betterment work is designed to increase the water supply for this division and to permit better utilization of that supply.

Belle Fourche project, South Dakota, total estimated obligations, $629,193

The primary purpose of the Belle Fourche project is to supply irrigation water for about 55,700 acres of land. The project is located in west-central South Dakota on the Belle Fourche River.

The original rehabilitation and betterment program on this project consisted of the repair and replacement of control and outlet works on the Belle Fourche Dam, repair and replacement of structures on the canal and distribution features of the project and the construction of drainage ditches and structures to prevent further seeping of productive land. However, the Belle Fourche irrigation district passed a resolution dated March 10, 1952, recommending that the upstream face of the Belle Fourche Dam be improved through installation of a permanent type riprap which is estimated to ocst approximately $250,000. This work is included in the present budget. By the beginning of the current fiscal year the original rehabilitation and betterment program on this project had been practically completed. The remaining work which will be completed in the current fiscal year consists of the inactivation of the needle valve on the Belle Fourche Reservoir, minor improvements to the canal system, and painting of two steel bridges over the inlet canal. During fiscal year 1954 the only work which will be under way will be preliminary studies and investigations for the installation of a permanent type riprap on the Belle Fourche Dam which is scheduled to be placed under contract the following fiscal year.

By an amendatory repayment contract dated November 29, 1949, the Belle Fourche irrigation district obligated itself to repay expenditures up to $400,000 for rehabilitation and betterment work. This repayment contract is sufficient to cover all expenditures through fiscal year 1954. Negotiations are now in process leading to completion of repayment arrangements to insure the return of the cost of the additional work on the Belle Fourche Dam. No expenditures will be made on this work until a repayment contract has been executed and submitted to the congressional committees.

The individual features of the Belle Fourche project have been in operation for 41 years and during this time normal deterioration and use has made it essential to replace and rehabilitate certain structures and facilities in order to insure efficient irrigation operations and full return of the Government's investment. Furthermore, the safety of the upstream face of the Belle Fourche Dam has been a matter of concern for a number of years due to repeated failure of the concrete block facing. Continued operations of the structure has been possible only through constant vigilance on the part of the project operation and maintenance forces. It is essential that the rehabilitation and betterment of this structure be undertaken as soon as possible to insure the continued availability of water for the project land, and to prevent the loss of life and property that would certainly result from failure of the structure.

Okanogan project, Washington, total estimated obligations, $124,000

The primary purpose of the Okanogan project, located in Okanogan County in north-central Washington, is the irrigation of about 5,300 acres of land.

The rehabilitation and betterment program on this project consists of the alteration and rehabilitation of the dam, installation of protective blanketing above the spillway, and the installation of concrete lining in the outlet tunnel. At the present time the initial contract on the alteration of the dam and the installation of the protective blanketing has been awarded and completed. Additional contracts are to be awarded in the spring of 1953 with the objective of completing all work by the end of fiscal year 1954.

A repayment contract has been executed with the Okanogan irrigation district providing for the repayment of rehabilitation and betterment costs up to $126,000. The House and Senate Committees on Interior and Insular Affairs approved the repayment arrangements with the district on May 18, 1951, and June 12, 1951, respectively.

The deterioration of the storage and outlet facilities has resulted in high operation and maintenance costs which pose a threat to the repayment ability of the water users. The current program should be adhered to in order that the project can be placed on a sound operating footing as soon as possible.

Yakima project, Wash., total estimated obligations, $821,631

The Yakima project, located in south-central Washington, will, upon completion of construction of the Kennewick and Roza divisions, include the facilities for the delivery of water to an area of approximately 473,000 acres and generation of 22,000 kilowatts of electrical power.

The rehabilitation and betterment work on this project consists of the repair of the Tieton, Keechelus, and Kachess Dams and spillways, repairs to the bumping dam gate tower and outlet works, repair or replacement of 3 miles of pipelines on the Prosser Irrigation District's distribution system and repairs to the Spring Creek pumping plant. All work on these structures, which range in age from 18 to 41 years has been completed except for that on the Keechelus Dam and spillway. The latter work which is presently under contract is scheduled to be completed in fiscal year 1953.

Repayment of the cost of repairing the several dams and appurtenant works will be accomplished over a 20-year period by increased annual operation and maintenance assessments paid by the several irrigation districts and Warren Act contractors using water from these storage works. Existing construction repayment contracts include liability for the payment of operation and maintenance costs. These contract provisions which have been approved by the appropriate congressional committees are sufficiently broad to create a contract obligation for the rehabilitation and betterment work and have been so recognized by the governing boards of the major irrigation districts. The repayment of the cost of the work on the pipelines and pumping plant is provided for in the November 25, 1949, amendatory construction repayment contract with the Prosser Irrigation District. This contract merges the cost of not to exceed $100,000 of rehabilitation and betterment with the district's construction repayment obligation.

Shoshone project, Wyo., total estimated obligations, $669,000

The Shoshone project, located in northwestern Wyoming, includes facilities for the irrigation of approximately 115,000 acres of land and the generation of 10,600 kilowatts of electrical power.

The rehabilitation and betterment program for this project is confined to the Willwood and Frannie divisions. Work on the Willwood division consists of the repair and replacement of structures on the Willwood Canal and laterals and the construction of additional drainage facilities. On the Frannie Division, the program consists of the repair or replacement of structures of the Garland, Deaver, and Frannie Canals and laterals and the construction of additional drainage facilities. At the present time the program on these two divisions is approximately 40 percent complete and work is under way on the Frannie and Deaver Canals and the Frannie laterals and drains of the Frannie Division. On the Willwood Division, rehabilitation work is under way on the Willwood Canal and laterals. Work on the drainage facilities for the Willwood Division is scheduled to be initiated during the current fiscal year. The 1954 program provides for the completion of all work on the Frannie Division and the continuation of the work on the Willwood Division leading to completion the following fiscal year.

The repayment of the entire cost of the rehabilitation and betterment program on the Shoshone project is insured by contracts dated November 14, 1949, with the Deaver Irrigation District, which comprises the lands of the Frannie Division, and May 31, 1949, and June 30, 1950, with the Willwood Irrigation District.

The first irrigation water was made available to the Shoshone project water users in 1908. Since that time many of the structures have deteriorated to the point that high operation and maintenance costs are placing a heavy burden on the water users and are threatening the project repayment ability and an orderly return of the Government's investment. Furthermore, the productive capacity of a substantial portion of the land within the project has been seriously reduced by seepage from canals and laterals. It is, therefore, urgent that the program presently under way be continued as now scheduled to place the project back on a sound operating footing as quickly as possible.

Riverton project, Wyo., total estimated obligations, $1,950,952

The primary purposes of the Riverton project is the furnishing of a full water supply for the irrigation of approximately 98,000 acres of land and the generation of 1,600 kilowatts of electrical power. The project is located in central Wyoming along the Wind River.

The rehabilitation and betterment program for this project consists of repairs to Bull Lake and Pilot Butte Dams; repairs of lining and stabilization of the banks of the Wyoming Canal, first division; installation of the lining and repair of structures of the Wyoming Canal, second division, and Pilot Canal and laterals; and construction of the new drainage facilities for prevention of further seepage. By the beginning of the current fiscal year this program was approximately 74 percent complete, with work under way on the lining of the

Wyoming Canal, Pilot Canal, and the laterals and distribution system; stabilization of the banks of the Wyoming Canal, first division; and the construction and rehabilitation of drainage facilities. The program for fiscal year 1954 provides for the completion of all of this work except for the drainage facilities which will be completed the following fiscal year.

Of the estimated cost of the Riverton project rehabilitation and betterment program, $1,800,000 is covered by an amendatory construction repayment contract dated June 26, 1952. The balance of the cost amounting to approximately $150,000, representing the apportionate share of the cost of the work on joint facilities will be returned from net power revenues and a repayment contract to be entered into with water users on the third division, which is currently under construction.

The initial water deliveries to the water users of the Riverton project were made in 1925. The high operation and maintenance costs attributable to the deteriorated condition of many of these obsolete project facilities, as well as the reduction in agricultural production due to the waterlogging of farm land as a result of excessive seepage from canals and laterals, have posed a threat to the repayment ability of the water users. The present program is designed to return the project to a sound and efficient operating condition as quickly as possible.

DRAINAGE AND MINOR COMPLETION WORK

Mr. MARKWELL. I have a summary statement, Mr. Chairman, in connection with the desires of the committee, we have combined the drainage and other cleanup work on 18 projects.

Mr. JENSEN. That is with reference to the drainage and minor completion work in the amount of $1,135,000?

Mr. MARKWELL. Yes, sir.

Mr. JENSEN. Will you insert in the record a statement on that phase of the work?

Mr. MARKWELL. Yes, sir.

(The information is as follows:)

CONSTRUCTION AND REHABILITATION

DRAINAGE AND MINOR COMPLETION PROGRAM

There are 18 projects under the drainage and minor completion program for fiscal years 1953 and 1954 on which major construction work has been completed but on which there remains incidental drainage and/or completion work to be performed. Rather than require full resubmission year after year of each individual project they have been combined for simplicity of presentation.

The drainage and minor completion program consists of work on projects which are functionally complete except for a small amount of unforeseen repair or replacement work and those on which all construction features except drainage are complete or virtually complete. The program will be confined to minor drainage and rectificattion activities which is normally accomplished in the last phase of construction. It often comprises solely that completion work which is essential as a final adjustment to insure a satisfactory operating condition to the future operating entity. Some of the drainage activities in the program is on older projects which require the Bureau of Reclamation, in conformance with existing repayment contracts, to construct drainage facilities as needed. The overall drainage and minor completion program will vary somewhat from year to year by the completion of separate projects and the addition of near-completed projects in the budget year.

The program proposed for fiscal year 1954 is to be financed from an appropriation of $1,110,000 of new funds and $25,000 of prior year unobligated balances. Of the total, about $945,000 will be required for extensions of work related to drainage systems. The balance of the funds will be required for replacement, repairs, and minor construction. These funds are required primarily to maintain lands now in production and safeguard these productive areas against waterlogging through seepage, as well as for other minor work.

Summarized financial data

Allotment, fiscal year 1954	$1,110,000
Prior year balance available	25,000
Total obligations, fiscal year 1954	1,135,000

JUSTIFICATION OF ESTIMATE

Description

The drainage and minor completion program consists of projects which are functionally complete but which require a small amount of additional unforeseen repair or replacement work in the budget year; projects on which all construction features except drainage are complete or virtually complete (will be completed during budget years); and projects on which the only remaining construction is in connection with drainage and/or recreation.

The fiscal year 1954 program consists of continuing construction to early completion on these minor unfinished features.

The projects involved and their fiscal year 1954 allotment requirements are as follows:

	Fiscal year 1954 allotment
Boise-Kuna irrigation district, Idaho	$5,000
Buffalo Rapids:	
1st division, Montana	128,000
2d division, Montana	152,000
Mancos, Colo	50,000
Mirage Flats, Nebr	60,000
Pine River, Colo	50,000
Shoshone, Wyo	210,000
Sun River-Greenfields, Mont	52,000
Tucumcari, N. Mex	403,000
Total allotment	1,110,000

In addition $25,000 prior year balance is programed under the Deschutes project, north unit, Oregon.

Repayment

The reimbursable portion of the costs to be incurred by the work on these projects will be repaid by contracts in force or currently under negotiation, except in the case of the Mancos and Mirage Flats water conservation unit projects where permission is requested to increase the nonreimbursable costs.

Justification

Work involved in the drainage and minor completion program consists of the drainage operations and miscellaneous minor cleanup and rectification work which normally must be done at the completion of a project. The amounts involved are very small as compared to the total estimated cost of the works with which they are connected. Work of this nature must be accomplished in order to place the project in a proper condition for turning over to water users or other operating organization and to remove the project from the construction status. Funds shuld be provided in fiscal year 1954 to accomplish an orderly closing out of the construction operations on the projects involved.

Boise project, Kuna Irrigation District, Idaho

Description.—The Kuna Irrigation District comprising 48,999 acres of irrigable land is located approximately 20 miles southwest of Boise, Idaho. Irrigation water is obtained from storage in Arrowrock and Anderson Ranch Reservoirs. All features are complete except additional drainage structures.

Work proposed, fiscal year 1954.—During the year it is planned to spend $5,000 for deepening and realining existing channels and to provide the necessary inlets.

Buffalo Rapids project, first division, Montana

Description.—The first division lands consisting of 15,700 acres are located along the north bank of the Yellowstone River in Prairie and Dawson Counties in eastern Montana. Irrigation water is pumped from the Yellowstone River. The project is complete except for the drainage features which will be approximately 40 percent complete as of June 30, 1953.

Work proposed, fiscal year 1954.—Construction of drainage ditches and structures will be continued.

Buffalo Rapids project, second division, Montana

Description.—The second division consists of 11,600 irrigable acres and is located in eastern Montana, in Prairie and Custer Counties along the south bank of the Yellowstone River from which water for irrigation is pumped. All construction is complete except for the drainage features.

Work proposed, fiscal year 1954.—Seepage and water-level studies will be continued and drainage structures built as required.

Deschutes project, north unit, Oregon

Description.—The primary purpose of this unit, located in Deschutes and Jefferson Counties in central Oregon, is to provide a full water supply for the irrigation of 50,000 acres through the construction of Wickiup Reservoir ,a main canal 65 miles in length, and a system of laterals. The unit also furnishes supplemental water to 49,233 acres in established irrigation districts through the construction of the Crane Prairie Reservoir.

Work proposed, fiscal year 1954.—Program for fiscal year 1954 consists of continuing the program of fault sealing in the Wickiup Reservoir and main canal.

Mancos project, Colorado

Description.—This project, located in southwestern Colorado along the Mancos River, will furnish water for 9,000 acres of land and provide the Mesa Verde National Park and the town of Mancos with a water supply. This project was completed in 1952.

Work proposed, Fiscal Year 1954.—This work includes repair, replacement or relocation of structures and sections of canal damaged by earth and rock slides.

Mirage Flats project, Nebraska

Description.—This project is located in Sheridan and Dawes Counties in northwestern Nebraska near the headwaters of the Niobrara River and provides a full supply of water for the irrigation of 12,000 acres of irrigable land. This project was completed in 1950 but it has been found necessary to construct flood protective works.

Work proposed, fiscal year 1954.—During the year flood protective works to the Cottonwood Creek siphon on the main canal will be constructed.

Pine River project, Colorado

Description.—The Pine River project is located in southwestern Colorado. The Bureau of Reclamation is concerned only with the Vallecito Dam and Reservoir. Construction was complete on this feature in 1941 except for the dam crest and roadway which were purposely left incomplete until such time as the earth fill dam attained the proper degree of stability.

Work proposed, fiscal year 1954.—Stabilization of the dam embankments has reached a point where the crest can now be completed. Also a portion of the reservoir area is to be cleared of brush and timber.

Shoshone project, Wyoming

Description.—The Shoshone project is located in Park, Bighorn, and Carbon Counties in northwestern Wyoming and provides a full water supply to approximately 115,000 acres of semiarid land. The power system has an installed capacity of 10,600 kilowatts. The current project program is about 98 percent complete.

Work proposed, fiscal year 1954.—The program for this fiscal year includes continuation of construction on the Heart Mountain Division, consisting of canal and lateral lining, channel and bank protection, installation of measuring devices, extension of the drainage system and settler assistance.

Sun River project, Greenfields division, Montana

Description.—This project is located in north-central Montana in Teton and Cascade Counties. Project works extend along the north side of the Sun River and are capable of furnishing a full supply of water to 83,000 acres. Work on this project is complete except for a small amount of drainage construction and the rehabilitation of an existing tunnel on the Pishkun Canal.

Work proposed, fiscal year 1954.—Construction of the drainage features will be completed during the year and construction will commence on the tunnel improvement.

Tucumcari project, New Mexico

Description.—This project is located in eastern New Mexico in San Miguel and Quay Counties. Project lands consisting of some 42,214 acres are adajacent to and partially surrounding the city of Tucumcari. All features of this project will be completed during fiscal year 1953 except for the drainage.

Work proposed, fiscal year 1954.—Construction of the drainage structures will be continued as well as investigations of the need for possible additional drains. Limited canal and lateral lining will be placed to eliminate more expensive drains and maintenance work.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Austin, W. C., Oklahoma	$12,073,904	$12,043,904	$30,000		
Boise-Anderson Ranch, Idaho	30,437,499	30,025,721	411,778		
Boise Drainage, Idaho	85,630	36,582	5,000	$5,000	$39,048
Boise-Payette, Idaho	17,273,050	16,976,581	192,095		104,374
Buffalo Rapids, first division, Montana	2,520,066	1,918,516	240,267	128,000	233,283
Buffalo Rapids, second division, Montana	2,110,014	1,645,050	114,962	152,000	198,002
Deschutes, north unit, Oregon	11,282,000	10,412,350	81,924	25,000	762,726
Fort Sumner, New Mexico	2,480,622	2,477,760	2,862		
Lewiston Orchards, Idaho	2,412,171	2,410,139	2,032		
Mancos, Colorado	3,969,878	3,919,878		50,000	
Milk River-Fresno Dam, Montana	2,000,000	1,835,074	11,651		153,275
Minidoka-Gooding, Idaho	6,676,186	6,590,146	6,000		80,040
Mirage Flats, Nebraska	3,132,441	3,072,441		60,000	
Ochoco, Oregon	815,896	814,896	1,000		
Pine River, Colorado	3,339,957	3,289,957		50,000	
Shoshone, Wyoming	23,171,598	20,576,489	664,022	210,000	1,721,087
Sun River-Greenfields, Montana	9,671,441	9,551,506	40,220	52,000	27,715
Tucumcari, New Mexico	16,712,563	15,750,276	355,687	403,000	203,600
Total obligations	150,164,916	143,347,266	2,159,500	1,135,000	3,523,150
Method of financing:					
Allotment, fiscal year 1953			591,038		
Prior year balance available			1,593,462	25,000	
Balance available in subsequent year			−25,000		
Allotment required				1,110,000	3,523,200

RIVERTON PROJECT, WYOMING

Mr. BUDGE. Mr. Chairman, returning to the Riverton project, it has increased from an original estimate of $6,777,025 to $24,676,000, or four times the original estimate.

Mr. LINEWEAVER. Yes, sir. The Riverton project was first authorized back in 1918 or 1920.

Mr. BUDGE. When was construction started?

Mr. LINEWEAVER. The construction was started in 1920, and very much to the surprise of those of us who have inherited the Riverton project, the construction there has been strung out from 1920 to 1953, a period of 33 years. At times in the last 10 or 15 years, we have endeavored to bring it to completion, and every time that we have gotten started toward completing it, we have run into new difficulties.

We have about come to the conclusion, Mr. Budge, of recommending that the Riverton project, as it is now—when the facilities now under construction to serve the lands that have been opened—that we would just about stop where we are now. A great deal of the area is public land. We have some adjustments to make with the Indians who own various tracts scattered through there and there is a bill now pending by Congressman Harrison and the Senators from Wyoming to

straighten out that part of it. Riverton presents a difficult problem and one of our problem projects.

Mr. BUDGE. In line with what Mr. Kirwan was saying yesterday, it is a long process here. You have been working on this project for 32 years and the costs have gone up four times.

Mr. LINEWEAVER. Yes, sir, and I would say that if we ever figured out all the overhead and everything in those 32 years, I expect that the figures would be rather disconcerting.

Mr. BUDGE. I am inclined to agree with you.

(Discussion off the record.)

Mr. LINEWEAVER. Let me say this, however, notwithstanding that long drawn out construction period, the town of Riverton and the areas around there have been developed and it is a fairly prosperous community, notwithstanding the difficulties we and the settlers have had. You recall, Mr. Chairman, in 1948, we drove through there.

Mr. JENSEN. Yes, I remember that.

Mr. LINEWEAVER. There is good deal that can be shown for the Federal expenditure there. Fremont County owes practically all of its development to the Riverton project.

Mr. JENSEN. The next item is the Missouri Valley project.

CONSTRUCTION AND REHABILITATION AND OPERATION AND MAINTENANCE

MISSOURI VALLEY BASIN PROJECT CONSOLIDATED

Mr. JENSEN. We will insert at this point the special data sheets and information requested of the Bureau and pages 480–482 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION AND OPERATION AND MAINTENANCE

Construction

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$277,559,375	$72,560,928	$81,991,899
Unliquidated obligations	18,704,091	−8,243,452	−8,480,000
Total obligations	296,263,466	64,317,476	73,511,000

Operation and maintenance

	Actual 1952	Estimated 1953	Estimated 1954
Expenditures		$2,348,082	$3,575,743
Unliquidated obligations			1,000
Total obligations		[1] 2,348,082	3,576,743
Less: Funds advanced by water users			−5,000
Appropriation or estimate		[1] 2,348,082	3,571,743

[1] Consists of $962,582 of construction and rehabilitation funds allotted to Missouri River Basin project for operation and maintenance (phase E) and $1,385,500 allotted to the following projects but scheduled under Missouri River Basin for integrated power operations: Colorado-Big Thompson ($843,250), Riverton ($45,750), Shoshone ($100,800), and Kendrick ($395,700).

HISTORY OF PROJECT DEVELOPMENT

Location

In the States of Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, and Kansas.

Purpose

To provide iddigation, power, flood control, fish and wildlife facilities, recreational facilities, navigation and municipal water.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887), and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by State Document 247, 78th Congress, 2d session.

Initial date

Planning, advanced planning, construction, see data on individual units.

Date of functional completion of construction, indeterminable.

Fiscal year and amount of initial allotment of appropriations for construction, 1946, $10,780,300.

COSTS AND REPAYMENT

See attached Economic Analysis, Missouri River Basin Project.

OPERATIONS

Schedule of operations

	Initial operation		Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
	Date	Number				
Irrigation (acres):						
Full			213	25,490	55,311	5,284,800
Supplemental						1,116,900
Total	1950	213	213	25,490	55,311	6,401,700
Power (kilowatts)			37,200	52,200	102,200	1,021,260
Power rates (Mills: per kilowatt-hours):						
Firm at 50 percent load factor			5.4	5.4	5.4	5.4
Nonfirm (average)			3.3	3.3	3.3	3.3

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954

	Positions		Man-years
	Permanent	Temporary or seasonal	
Irrigation facilities:			
Actual June 30, 1952			
1953			
1954	31	2	
Power facilities:			
Actual June 30, 1952			
1953	130	4	
1954	240	6	
Joint facilities:			
Actual June 30, 1952			
1953			
1954	22		
District Headquarters charges:			
Actual June 30, 1952		*	
1953			19.1
1954			39.4
Denver office:			
Actual June 30, 1952			
1953			
1954			.6
Regional CPA services:			
Actual June 30, 1952			
1953			5.6
1954			10.0
Total:			
Actual June 30, 1952			
1953	130	4	24.7
1954	293	8	50.0

Other project statistics, see page BR 228.

Summarized financial data

Estimated total obligations		$3,760,394,307
Total obligations to June 30, 1952		296,263,466
Allotment, fiscal year 1953	[1] $40,958,704	
Prior year balance available	23,553,772	
Balance available subsequent years	−195,000	
Total obligations, fiscal year 1953		[1] 64,317,476
Allotment, fiscal year 1954	$73,316,000	
Prior year balance available	195,000	
Total obligations, fiscal year 1953		73,511,000
Balance to complete		3,326,302,365

[1] Excludes $962,582 of construction and rehabilitation funds alloted to Missouri River Basin project for operation and maintenance (phase E) but scheduled under Missouri River Basin operation and maintenance (see pt. 1).

JUSTIFICATION OF ESTIMATES

Authorization

The Missouri River Basin project was authorized by the Flood Control Act of December 22, 1944 (58 Stat. 887) and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Location

The units of the Missouri River Basin project are located within the drainage basin of the Missouri River, comprising all or parts of the 10 States of Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa and Missouri.

Description

The purpose of the Missouri River Basin project is for the full utilization of all of the water resources of the basin. It will provide a full water supply for about 5,300,000 acres of land, and a supplemental water supply for about 1,100,000 acres, develop about 1 million kilowatts of electrical energy, control floods, and provide facilities for recreation, fish and wildlife, navigation, municipal water, mineral development, and industrial growth. Accomplishment of the goals of basinwide development requires the undertaking of simultaneous programs of investigations, construction, and operation and maintenance. In addition, to insure a unified approach to all of the many factors involved in developing the basin resources to the optimum extent, with proper recognition of all problems influencing the program, seven agencies of the Department of Interior participate in the program. Those agencies which participate with the Bureau of Reclamation in this program are the Bureau of Land Management, Bureau of Mines, Fish and Wildlife Service, Geological Survey, National Park Service, and the Bureau of Indian Affairs. The plans and activities of these agencies are effectively coordinated by continuous interagency liaisons through the Missouri River Basin Field Committee and the Missouri River Basin Inter-Agency Committee.

Repayment

Water service and repayment contracts are being negotiated with the potential water users of each irrigation and municipal water development as the units approach the construction stage. The cost of facilities for the generation and distribution of electrical power will be returned from power revenues. The repayment status is explained in greater detail in the supporting justification for each of the individual units or divisions ready for or under construction.

Status

By the beginning of fiscal year 1953 work had been advanced to the point where 10 units and divisions of the Missouri River Basin project were under construction. At that time the Angostura, Enders, Cedar Bluff, Dickinson, Heart Butte, Keyhole, Kortes, Medicine Creek, Shadehill, and Bonny Dams were functionally complete and in operation. Construction of the canals and laterals to serve 2,218 acres of the Savage unit was complete and the Kortes and Angostura powerplants were in full operation. During fiscal year 1953 work will be completed on the irrigation facilities of the Angostura and Fort Clark units and Boysen Dam and powerplant will be completed and 15,000 kilowatts of hydroelectric power made available. Construction will be continued on Canyon Ferry Dam and powerplant; Trenton, Jamestown, and Kirwin Dams; the irrigation facilities of the Bostwick and Frenchman-Cambridge division; and the transmission facilities to interconnect and deliver power from powerplants of the Bureau of Reclamation and the Corps of Engineers. Final designs will be completed, contracts awarded and construction initiated on Missouri diversion dam and the Pactola, Tiber, and Webster Dams and Reservoirs. Construction will be initiated on the irrigation facilities of the Crow Creek and Heart Butte units. Preconstruction activities leading toward preparation of the definite plan reports will be under way on 21 other phase B units. By the end of the fiscal year phase B work will have been advanced on 11 of these units to the point where they will be ready for construction. Basinwide investigations of the general plan of development will be continued.

PROJECT STATISTICS

Mr. JENSEN. Will you summarize the project statistics which appear on pages 228, 229, and 230?

Mr. LINEWEAVER. We will submit that for the record.

(The information requested is as follows:)

Project statistics, Missouri River Basin project

Feature or item	Unit	Actual, fiscal year 1952	Estimated	
			Fiscal year 1953	Fiscal year 1954
IRRIGATION SYSTEM				
Irrigable Area: Full Irrigation	Acres	213	25,490	55,311
Total	do	213	25,490	55,311
Total gross crop value of project acreage	Dollars	$10,650	$1,405,045	$2,805,555
Average gross crop value per acre	do	50	70	65
Storage dam and reservoirs	Number	6	11	12
Diversion dams	do		3	4
Pumping plants	do	1	4	14
Canals	Miles	20.3	148.6	224.9
Laterals	do	26	74.4	131
Drains	do	14	20	29.3
Telephone lines	do	17	24	24
Operating roads	do	55	144	212
POWER SYSTEM				
Annual sales	Kilowatt-hours	42,836,219	787,354,000	[1] 1,270,747,000
Total power revenues	Dollars	$287,817	[1] $4,351,251	[1] $6,989,690
Powerplants	Number	2	3	4
Plant capacity	Kilowatts	37,200	52,200	102,200
Transmission lines	Miles	712	4,108	4,346
Substations	Number	8	106	125

[1] Includes revenues and sales of the Corps of Engineers powerplants in Missouri River Basin for which the Bureau is marketing agent. Included also are sales and revenues of powerplants on Shoshone, Riverton, Kendrick, and Colorado-Big Thompson projects. Revenues will be distributed to these projects in accordance with the average rate and repayment studies.

PHASE B, C, AND D UNITS

Mr. JENSEN. Please explain the projects proposed in phases B, C, and D and list them in the record.

Mr. LINEWEAVER. We will submit that for the record.

Mr. JENSEN. Take them in their priority status and show the projects on which you are putting the most emphasis.

Mr. LINEWEAVER. We will put them in that order.

Mr. JENSEN. That, naturally, would show what projects you feel are of greatest importance.

Mr. LINEWEAVER. Yes, sir. We can do that for B and we will do the best we can with respect to the further investigations of the basin-wide plan under phase C.

Mr. JENSEN. Phases C and D are your preliminary studies and early planning.

Mr. LINEWEAVER. Yes, sir, but phase D relates to cooperation with the Corps of Engineers.

(The information requested follows:)

STATEMENTS ON PHASE B UNITS, MISSOURI RIVER BASIN PROJECT IN FISCAL YEAR 1954 BUDGET REQUEST ARRANGED IN ORDER OF PRIORITY

PHASE B—UNITS READY FOR CONSTRUCTION

1. Sargent unit, Nebraska, 1954 estimate $45,000

The Sargent unit, located in Blain and Custer Counties, Nebr., will provide water to irrigate 17,600 acres of irrigable land and to operate the Lillian hydroelectric plant with an installed capacity of 4,360 kilowatts. Detention dikes and

reservoirs, forming a part of and protecting the canal, will also afford ample flood protection to project lands and to the town of Sargent.

The detailed investigations are well advanced for the Milburn diversion dam, Sargent Canal, Woods Park pumping plant, and the attendant lateral and drainage works. A definite plan report on the entire unit is scheduled for completion in fiscal year 1953. All activities in fiscal year 1953 will be directed toward the completion of engineering plans for the initial features, collection of design data for the later sections of the project works, repayment and water-right negotiations, and other preconstruction items in order that construction may be initiated as early as possible and carried forward without interruption. The program for fiscal year 1954 includes the completion of the preconstruction activities on the headquarters facilities, the Milburn diversion works, the first two sections of the Sargent Canal, and the first section of the laterals, surface drains, and detention dikes.

The Sargent unit involves 17,600 acres of dry farmland, susceptible of high production under irrigation, which is a part of a much larger highly productive area in the lower Platte River Basin. However, the immediate area, as well as the surrounding dry upland grazing areas, is subject to serious drought as experienced in 1952 and in many other years and can be developed for maximum agricultural production only by valley irrigation. For nearly two decades local groups have made determined and repeated attempts to obtain irrigation development. In 1950 they joined with the Farwell unit sponsors in forming the Loup Basin Reclamation District, approved the district mill levy by a vote of 2 to 1, and have demonstrated or indicated their willingness to accomplish all things necessary to attain irrigation at the earliest practicable date. An election on the proposal for formation of the district was held on November 4, 1952, the vote thereon being 142 to 25 in favor of the district.

2. Owl Creek unit, Wyoming, 1954 estimate $30,000

The Owl Creek unit, located in Hot Springs County, north-central Wyoming, will provide supplemental water supply for 18,061 acres of irrigated land. The integral parts of the system are Anchor Dam and 2 pumping plants and canals and laterals to deliver water from the Bighorn River to 4,421 acres of land in the Lucerne area.

The detailed unit report has been completed and approved and most of the design data for the major features has been gathered. On the pumping plants and canals designs are practically completed. During fiscal year 1954 specifications will be completed and made ready for issuance early in fiscal year 1955.

The primary purpose of the Owl Creek development is to provide supplemental irrigation water to 18,061 acres of irrigated land. During the latter part of June, the stream flows decline rapidly; as a result there is a very little water available in July, August, and September to mature crops. Irrigation farming on Owl Creek, which has been dependent on natural flows has been precarious during the entire history of the project. The construction of Anchor Dam and the Lucerne pumping plants will assure the full and adequate water supply which will not only stabilize and improve the local economy but will provide additional food to help meet the demands of our rapidly increasing population.

3. Yellowtail unit, Montana-Wyoming, 1954 estimate, $35,000

Yellowtail Dam, located at the mouth of the Bighorn Canyon, southwest of Hardin, Mont., will provide a reservoir to regulate runoff for irrigation, flood control, power generation, and other uses. All water releases except spillway discharges will be made through the powerplant, at the toe of the dam, which will have an installed capacity of 200,000 kilowatts.

A definite plan report has been prepared and approved. A temporary Government camp has been constructed. As of June 30, 1953, detailed designs on the dam, powerplant, and access roads will be well advanced. Negotiations of easement and right-of-way problems will be substantially completed. The program for fiscal year 1954 provides for continuation of the preparation of designs and specifications for the dam and powerplant.

The Yellowtail unit is a multiple-purpose development principally for irrigation, flood control, and electric power. Early completion is important for all of these purposes. The current situation with respect to certain strategic minerals, of which supplies are located within range of Yellowtail power, and for which its power is a prerequisite, adds particular urgency to the development now. Chrome is a prime example. The only significant deposits of chrome in the United States are near the plant and low-cost power is essential to an economic

development of the resource. Tungsten, nickel, phosphate, and molybdenum are also found in the Yellowtail area. Their development, made feasible by low-cost power, would add significantly to the strength of the Nation's economy. The existing oilfields in the Montana-Wyoming area will need more power for pumping and processing, and to replace gas now used for these purposes, but which should be used for repressuring the fields. Of still greater significance, a major new oil-producing area is developing in the Williston Basin, the power requirements of which probably will reach large proportions. In addition, the area in which Yellowtail power will be marketed will need more power to supply the general residential, commercial, and miscellaneous industrial requirements. Montana also needs more irrigated land as it cannot provide itself with sufficient hay and alfalfa to carry its livestock, nor has it means to provide adequate dairy products or vegetables without irrigation.

4. Glendo unit, Wyoming, 1954 estimate, $20,000

Glendo Dam, located on the North Platte River approximately 6 miles southeast of Glendo, Wyo., will provide means for conserving early runoff water that has been lost in previous years. The reservoir will also alleviate silting problems inasmuch as Guernsey Reservoir, due to a deposition of silt, is decreasing in capacity at the rate of 1,200 acre-feet per year. Due to an ever-increasing demand for irrigation pumping, Glendo power plant of 24,000 kilowatts and Fremont Canyon power plant of 18,000 kilowatts will be constructed. In addition, space has been provided for the reregulation of water released from upstream reservoirs for the purpose of generating electricity at the Alcova and Fremont Canyon powerplants. At the present time, the plan is not to include irrigation in the operation of the Glendo Reservoir but rather use the sectional gain for generation of power. Under an alternate plan of operation, however, it is possible to supply some 45,000 acres of land below the proposed Glendo site with a supplemental supply of water.

Operation studies, water-supply studies, and power studies based on a reservoir capacity of 800,000 acre-feet have been completed and incorporated into a definite plan report for submittal to the States of Wyoming, Colorado, and Nebraska, but it is anticipated that this interstate problem will be satisfactorily resolved during the current fiscal year. The program for fiscal year 1954 provides for the continuation of final designs on Glendo Dam and Reservoir and Glendo power plant.

Because of the demand for power in Wyoming, northern Colorado, and western Nebraska area that is apparent for the next several years, construction of Glendo and Fremont Canyon powerplants should start as soon as possible. A boon to the oil industry in this area is a pipeline from Worland, Wyo., through Casper, Wyo., Ogallala, Nebr., thence to Wood River, Ill., a large refining center. Within this market alone the emergency power and energy requirements of this line will be 9,650 kilowatts of power and 4,730,000 kilowatt-hours of energy per month. Many oilfields in the area are converting from gasoline- and diesel-powered pumps to electric power if available. Several municipalities in the area are requesting power from the North Platte system. The irrigation pumping load is surely and steadily increasing.

It is estimated that by 1960 there will be about 36,000 acres of irrigated land getting their water supply through electrically driven pumps. This is a 50-percent increase over the acreage now being supplied. The operation of the Glendo unit is flexible. Should the States of Colorado, Wyoming, and Nebraska agree, it could be operated to furnish a supplemental supply of water to 40 to 60 thousand acres of land and still not reduce the amount of power generated. Glendo will provide flood protection to the area in the vicinity of Torrington, Wyo., and Scottsbluff, Morrill, and Bridgeport in Nebraska. The Guernsey Reservoir, a vital part of the North Platte project, is filling with silt at the rate of 1,200 acre-feet annually. Already it has lost one-third of its capacity. Glendo will reduce by 93 percent this rate of sedimentation, thus prolonging the life of the Guernsey Reservoir by many years.

5. Wilson unit, Kansas, 1954 estimate, $50,000

The major functions to be performed by the Wilson unit, located in north-central Kansas along the Saline River, are irrigation, flood control, and sediment retention. Wilson Dam and Reservoir will provide storage for the irrigation of 2,200 acres of land in the Wilson unit and 20,800 acres in the downstream Kaw division.

A brief feasibility report has been completed and the definite plan report for the Wilson unit is scheduled for completion August 1953. The program for fiscal year 1954 provides for the continuation of preconstruction work leading

to start of construction in fiscal year 1955. This preconstruction work will consist of foundation explorations, materials investigation, and final assembly of design data for Wilson Dam and Reservoir and detail data on the irrigation system as required for the definite plan report.

Recurring droughts and floods devastate the economy of the Missouri River Basin. Droughts range from those in the disastrous thirties extending over a period of years to those intermittent years of short rainfall when the lands do not produce to capacity because of lack of moisture at the proper time. Floods range from the catastrophies of 1935 in the Republican River and 1951 in the Kansas River to the recurring annual floods which attract little public attention but accumulate damages which compare with those of the spectacular flood disasters. The four westernmost tributaries of the Kansas River are the Republican, Smoky Hill, Solomon, and Saline Rivers. Flood-control structures have been or are under construction on the first three tributaries. Construction of Wilson Dam on the Saline River will extend flood protection to that tributary. The 1951 flood damages on the Saline were assessed at nearly $8,000,000. This estimate does not include much greater damages downstream which are partly attributable to flooding on the Saline River.

6. Hanover unit, Wyoming, 1954 estimate, $52,000

The primary purpose of the Hanover Unit, located in Washakie County, near Worland, Wyo., is to provide a full water supply for 6,153 acres of semiarid land. Two primary pumping plants will lift water from the existing Hanover Canal to serve the new lands, and two relift pumping units will be constructed to serve higher areas in the unit.

Preliminary investigational surveys and preparation of volume I of the definite plan report are complete. Field surveys for design data and preparation of volume II of the definite plan report will be completed during fiscal year 1953. During fiscal year 1954 final design data and field surveys will be completed and specifications written.

Completion of the Hanover unit will permit a needed expansion of the agricultural and livestock economy of the Bighorn Basin. Irrigation of the 6,153 acres will make available 48 new family-sized farm units and thereby contribute to the national food supply and to the economy of the area.

7. Glen Elder unit, Kansas, 1954 estimate, $50,000

The major functions to be performed by the Glen Elder unit, located in north-central Kansas on the Solomon River, are irrigation, flood control, and sediment retention. Storage in the Glen Elder Dam and Reservoir will irrigate approximately 10,000 acres of land in the Glen Elder unit and an additional 16,000 acres in the Kaw division.

By June 30, 1953, design data for Glen Elder Dam and Reservoir will be nearly complete. The program for fiscal year 1954 provides for a continuation of preconstruction work leading to start of construction on the dam and relocation work in fiscal year 1955. This preconstruction work consists of final assembly of design data for Glen Elder Dam and Reservoir and advance of preconstruction data on irrigation system.

The tremendous damages resulting from floods in the Kansas River Basin clearly established the need for further regulation and control of unrestrained river flows. Damages resulting from the July 1951 flood alone were estimated at over $16 million along the Solomon River. This estimate does not include greater damages downstream which are partly attributable to flooding on the Solomon River. Over 1,142,000 acre-feet of flood storage is required in the Solomon River Basin to control a similar flood. Glen Elder Reservoir, along with Kirwin Reservoir, now under construction, and the Webster Reservoir, started in fiscal year 1953, will provide the necessary flood-control capacity on the Solomon River.

As in other Great Plains areas, the climate which produces flooding rains conversely deprives the area of moisture in critical crop-growing periods. Although dryland farming in the unit area produces abundantly with adequate moisture, intermittent droughts and poor distribution of rainfall have impaired the predominantly agricultural economy and resulted in instability and insecurity. Diversification in farm operations, a balanced livestock program, and more dependable crop yields sustained at higher levels through the introduction of irrigation will lend stability to the area.

9. Bluff unit, Wyoming, 1954 estimate, $25,000

The primary purpose of the Bluff unit, located in Washakie County in northwestern Wyoming, is to provide a full water supply to 1,242 acres of land by

means of 2 pumping plants which will lift the water from the present Bluff Canal into the proposed lateral systems.

Preliminary investigational surveys, office compilation of data, and the assembly of data for volume I of the definite plan report has been completed. The report will be reviewed and approved by the end of the current fiscal year. During fiscal year 1954 field surveys and final design data will be completed and specifications will be prepared for issuance early in fiscal year 1955.

Completion of Bluff unit will permit a needed expansion of the agricultural and livestock economy of the Bighorn Basin. The irrigation of 1,242 acres of new land will provide some new farms for new farm families and will make it possible to increase the size of some existing farms so that they may become sound economic units. Development of the unit will permit more diversified agriculture which would have a very stabilizing influence on the livestock industry and local economy.

9. Charley Creek unit, Montana, 1954 estimate, $13,000

This unit is located in Richland County in northeastern Montana. A river pumping plant, and system of canals, laterals, and drains will serve the 820 irrigable acres in the unit.

A definite plan report covering both the Charley Creek and Nickwall units is scheduled to be resubmitted in fiscal year 1953. In the latter part of fiscal year 1953 construction designs are scheduled to be initiated. During fiscal year 1954, construction designs will be advanced and specifications prepared for issuance early in fiscal year 1955.

Development of this unit, and Nickwall unit upstream, is considered necessary and urgent in order to make the farming and livestock industry a more stabilized operation in the wide area of northeastern Montana. The difficult times of the dry 1930's and the decreased production of the last three rather dry growing seasons are clear indications of the need for irrigation development in this vicinity.

10. Helena Valley unit, Montana, 1954 estimate, $40,000

The Helena Valley unit, located in central Montana, provides for the irrigation of about 21,100 acres, part of which is presently irrigated.

As of June 30, 1953, volume I of the definite plan report will have been submitted to the Commissioner for his approval. During fiscal year 1954, detailed design surveys will be started on the pumping plant and tunnel.

Complete failure of the existing pumping system faces the Helena Valley irrigators. Necessary remedial measures are beyond the ability of the water users to finance under their present operating agreement with the State water board. Consequently, local agitation for Bureau assistance and development has been steadily increasing.

11. Nickwall unit, Montana, 1954 estimate, $25,000

The 2,790 irrigable acres of the Nickwall unit, located in McCone and Richland Counties in northeastern Montana, will be served by a river pumping plant and a system of canals, laterals and drains.

A revised definite plan report has been completed on the Nickwall and Charley Creek units and is scheduled for submittal in the spring of 1953. During fiscal year 1953, construction designs are expected to get under way on the irrigation facilities of the unit.

During fiscal year 1954, construction designs will be advanced and specifications prepared.

Development of the Nickwall unit is considered necessary and urgent in order to make the farming and livestock industry a more stabilized operation in a wide area of northeastern Montana. The difficult times of the dry 1930's and the decreased production the last three rather dry growing seasons are clear indications of the need for irrigation development in this vicinity.

Phase B—Units being prepared for construction

Allotment, fiscal year 1953	$1,149,826	
Prior year balance available	985,719	
Total obligations, fiscal year 1953		$2,135,545
Allotment, fiscal year 1954	$2,120,000	
Total obligations, fiscal year 1954		2,120,000

JUSTIFICATION OF ESTIMATE

Location

The developments of the Missouri River Basin project are located within the drainage basin of the Missouri River within the States of Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, and Wyoming. Power marketing extends into Iowa, Minnesota, and Missouri.

General conditions

Phase B investigations of the Missouri River Basin are performed to develop definite plans for individual units of the Missouri River Basin project which are being made ready for construction. These investigations are programed on a unit basis. They include repayment negotiations and other negotiations with local interests, detailed surveys, and preparation of definite plans and final designs for initial contruction features and other preconstruction work which must be undertaken before the unit is ready for the initiation of actual construction.

The investigations consist of such activities as continuing review of and adding to the data collected by previous surveys and investigations; compiling of economic data; detailed land classification of irrigable area; drainage studies; detailed mapping surveys of dam, reservoir, canal, and other structure sites, and of irrigable land areas; gathering geological data; establishing pumping plant, dam, canal, powerplant, powerline, and other structure locations; preparation of maps, charts, and graphs for analysis purposes; preparation of firm cost estimates; the analysis and assembly of data into definite plan reports; preparation of designs, estimates, and construction specifications; study of repayment capabilities of beneficiaries of development and preliminary negotiations leading to a repayment contract; and other work prerequisite to actual construction.

The bringing together of such investigations results in a definite plan for final designs and estimates, issuance of specifications, orderly construction programs, repayment capabilities, and logical operation and maintenance methods.

Status

At the beginning of fiscal year 1953 the Rapid Valley unit in South Dakota was moved from phase B to phase A. By the end of the current fiscal year there will be 11 phase B units ready for construction, the programs for which are presented in separate individual statements. In addition, phase B investigation work is progressing on a number of other units. The program for these units, which are being prepared for construction, is discussed herein.

In fiscal year 1953 phase B investigations were started on the Ainsworth unit and were continued on 20 units (including 5 units previously scheduled under phase A) being prepared for construction. Definite plan reports are scheduled for completion for four of these units in fiscal year 1953.

12. Ainsworth unit, Nebraska

The Ainsworth unit will include the Merritt Dam and Reservoir on Snake River, a tributary of the Niobrara River, in Cherry County, Nebr., 80 miles of main canal, and lateral and drainage systems to irrigate 44,800 acres in Brown and Rock Counties. Development of the project would provide water for irrigation on a dependable drought-free basis adding stability to crop production by sustaining good yield during dry periods and increasing yields in other periods. Surveys are in progress to compile data for preparation of the definite plan report. These investigations will continue and the definite plan report is scheduled for completion at the end of fiscal year 1954 to make the unit ready for construction in fiscal year 1955.

13. Colgate unit, Montana

This unit, located in Dawson County near Glendive, Mont., would supply irrigation water for 1,300 acres of new land on the east side of the Yellowstone River by pumping from the river. This unit is in an area in which the use of irrigated lands can be closely integrated with range and dry land crop production. Production of feed for winter periods and drought season will aid in stabilization of the livestock production capabilities of surrounding rangeland. The definite plan report is being prepared and will be completed at the beginning of fiscal year 1954. Detailed designs and specifications will be in progress in fiscal year 1954 on the pumping plant and other features in order to make the unit ready to start construction in fiscal year 1955.

14. Oahe unit, South Dakota

This unit is located in east central South Dakota where some 750,000 acres of irrigable land lie in a strip about 30 miles wide along the James River extending from the vicinity of Aberdeen to Woonsocket. The water supply for the unit will be diverted from Oahe Reservoir, being constructed on the Missouri River by the Corps of Engineers, and conveyed to the James Valley by a supply works consisting of a pumping plant, Pierre Canal, Blunt Reservoir, Ree Canal, and Pony Hills powerplant. The amount and distribution of precipitation in the Oahe area is such that during normal years crop yields are only half of what they would be with irrigation, and sometimes during drought years complete crop failure occurs. Two development farms are being operated in the project area. Topographic mapping and other engineering surveys, land classification, drainage investigations, geologic explorations, economic studies, etc., will continue in fiscal year 1954.

An extensive aquifer, or underground reservoir, has recently been discovered in the area between Huron and Redfield which is extremely important as a source of irrigation pumping. Explorations of this aquifer have indicated excellent opportunities and drilling and the installation of test pumps should be expedited to the maximum extent. The amount proposed for the Oahe unit for fiscal year 1954 of $555,000 will permit some development of the area but the work can be greatly expedited by reprograming available funds for the remainder of fiscal year 1953. Intensive local interest and the need for irrigation development in this area make it highly desirable to accelerate this work.

15. Farwell unit, Nebraska

The plans for this unit include Sherman Dam and Reservoir to be constructed offstream from the Middle Loup River, and several irrigation diversion and distribution features which would permit the irrigation of about 60,400 acres of land located for the most part along uplands tributary to the Middle Loup Valley in Valley, Sherman, and Howard Counties, Nebr. The unit is situated in an area which has been subjected to long periods of drought which has at various times seriously injured the agricultural economy of that area. Local interests of the Sargent and Farwell units have formed the Loup Basin Reclamation District which was recognized officially by the State of Nebraska on January 27, 1950. Detailed land classification and topographic surveys have been completed. Other investigations and studies required to compile data for the definite plan report are in progress and will continue through fiscal year 1954. The report is scheduled for completion in fiscal year 1955.

16. Shoshone extensions unit, Wyoming

This unit, located in Park and Bighorn Counties, Wyo., would provide irrigation for 67,210 acres of new land and supplemental water for 4,041 acres inadequately irrigated at present. Water will be supplied from the existing Buffalo Bill Reservoir, located on the Shoshone River, by diverting to the proposed Oregon Basin Reservoir and by diverting through the existing Heart Mountain Canal siphon which crosses the Shoshone River above Cody, Wyo. A new reservoir will be constructed at the Renner (formerly Meadows) site on Wood River to serve the Gooseberry area and to augment supplies for the Greybull River. Early construction of this unit is desirable because its development will add materially to the wealth of the community by assisting in stabilizing the livestock industry in the surrounding area by providing supplemental feed. Also, this unit will provide a number of new units, as it is one of the few remaining large blocks of public land available for irrigation development and veterans' settlement. Investigations are in progress and the general plan for developing the unit has been established. The definite plan report is being prepared and is scheduled for completion by the end of fiscal year 1953. Design data will be assembled and final designs and estimates initiated for initial features in fiscal year 1954 to make the unit ready to start construction at the beginning of fiscal year 1955.

17. Scotia unit, Nebraska

This unit would provide irrigation for 6,400 acres of new land and supplemental water for 600 acres along the east side of the North Loup River from the existing Hardenbrook diversion dam (near Ord) to Cotesfield, in Valley, Greeley, and Howard Counties, Nebr. Because of intensity of local demand, the simplicity of construction and the lack of serious problems, the Scotia unit has been selected for early construction. This unit is in phase C in fiscal year 1953. The unit will be moved from phase C to phase B in fiscal year 1954, and investigations required for preparation of the definite plan report will be initiated.

18. Lavaca Flats unit, Nebraska

This unit, located about 12 miles southeast of Gordon, Nebr., would provide irrigation for approximately 3,500 acres of new land by pumping from the Niobrara River. Development of the project would provide water for irrigation on a dependable drought free basis adding stability to crop production. The unit is being prepared for construction as a result of studies for preparation of the report on the Niobrara River Basin, now nearing completion, which indicate the desirability of early construction of the unit. The investigations required for preparation of a definite plan report will be initiated in fiscal year 1954.

19. Kaycee unit, Wyoming

This unit, located in Johnson and Sheridan Counties, Wyo., consists of about 6,000 acres of presently irrigated land along the Powder River between Kaycee and Sussex, and about 12,200 acres of new land located along the Powder River north of Sussex. Storage for irrigation will be provided in the Hole-in-the-Wall Reservoir (formerly Middle Fork Reservoir), located on the Middle Fork of the Powder River. Irrigation along the Middle Fork and main stem of Powder River from Hole-in-the-Wall Dam site to the Montana State line has been developed to the limit of the uncontrolled water supply, and drought conditions are being experienced in the area which is seriously affecting the economy of Powder River Basin which is based on livestock production. A stabilized water supply which can be provided by this unit would serve to increase the winter feed base and permit better balanced utilization of adjacent summer ranges. The definite plan report will be completed late in fiscal year 1953. The program for fiscal year 1954 provides for a continuation of designs and preparation of specifications for Hole-in-the-Wall Dam and Reservoir to make the unit ready for construction in fiscal year 1955.

20. Stipek unit, Montana

This unit, located near Glendive in Dawson County, Mont., would provide irrigation for 4,400 acres of new land by pumping from the Yellowstone River. Development of irrigation would aid in stabilizing the local economy through increased production of feed and cash crops. The definite plan report is under preparation and is expected to be completed in fiscal year 1953 after which preparation of final designs and specifications will be initiated in fiscal year 1954, to make the unit ready for construction in fiscal year 1955.

21. Seven Sisters unit, Montana

This unit, located about 12 miles southwest of Sidney in Richland County, Mont., would provide for irrigation of 4,425 acres of new land by pumping from the Yellowstone River. Development of irrigation would not only aid materially in stabilizing the local agricultural economy, but would add to the Nation's food supply. Preparation of the definite plan report is in progress and the report will be completed in fiscal year 1953. Some work on final designs and specifications and repayment negotiations will continue in fiscal year 1954 to make the unit ready for construction in fiscal year 1955.

22. Red Flat unit, Wyoming

This unit, located on the Bighorn River in Bighorn County, Wyo., would provide for the irrigation of 900 acres of new land by pumping. Power and water storage regulation will be provided by Boysen Dam, Powerplant and Reservoir of the Boysen unit, under construction upstream on the Bighorn River. The unit is located in an area where a reliable feed base is sorely needed to supplement the local livestock industry. Owners in the area have indicated a definite interest in early construction of the unit. This unit, which is in phase C in fiscal year 1953, will be moved to phase B in fiscal year 1954 and the studies initiated for the definite plan report which is scheduled for completion in fiscal year 1955.

23. Bighorn unit, Wyoming

This unit, located along the Bighorn River in two areas in Washaki and Bighorn Counties, Wyo., would provide irrigation facilities for 3,200 acres of new land by pumping. Power and water storage regulation will be provided by Boysen Dam, Reservoir, and powerplant of the Boysen unit, under construction on the Bighorn River upstream. Field surveys have been completed and designs and estimates are in progress. The definite plan report is scheduled for completion in fiscal year 1954.

24. East Bench unit, Montana

This unit, located near Dillon in southwestern Montana, would consist of the Clark Canyon Dam and Reservoir on the Beaverhead River, a diversion dam and a system of canals, laterals, and drains to furnish irrigation water for approximately 25,000 acres of new land and a supplemental supply to approximately 14,500 acres. This potential development would assist materially in stabilizing the livestock industry and economy of the area. Investigations are in progress to evolve the definite plan for the unit and will continue through fiscal year 1954 in order to complete the definite plan report early in fiscal year 1955.

25. Narrows unit, Colorado

This unit includes the Narrows Dam and Reservoir to be constructed on the South Platte River 8 miles west of Fort Morgan, Colo. The Narrows Dam will conserve flood flows and the return flows which result from upstream developments and will provile supplemental irrigation water for approximately 230,000 acres currently irrigated and irrigation water for about 30,000 acres now dry-farmed or supplied by pump irrigation in Weld, Morgan, Washington, Logan, and Sedgwick Counties. The first use of the water will be to furnish a supplemental supply. The Narrows Dam will make possible maximum beneficial use of waters imported from the Colorado River Basin, store excess local flows, and provide flood control downstream from the dam. A preliminary draft of the definite plan report on the unit has been prepared and submitted to the State of Colorado. The Colorado Water Conservation Board held public hearings concerning the unit but has not yet held the final meeting to crystallize the attitude of the State concerning the project. Land classification and final designs and specificaions for the dam are being made and will continue in fiscal year 1954 to make the unit ready for construction in fiscal year 1955.

26. Elm Coulee unit, Montana

This unit would provide irrigation for 1,800 acres of new land near Savage in Richmond County, Mont., by pumping from the Yellowstone River. Upon construction of this unit, an increased feed base will develop and be available to the dry land livestock industry of the adjacent area making for greater stabilization in that industry. Private landowners have requested early determination of feasibility. Detailed topographic surveys and land classification have been completed and other investigations for the definite plan report are in progress and will continue in fiscal year 1954.

27. Haley unit, Montana

This unit, located in Prairie County near Terry, Mont., would provide irrigation for 3,100 acres of new land by pumping from the Yellowstone River. Development of the unit would aid materially in stabilizing the livestock economy of the area. This unit is in phase C in fiscal year 1953, but will be moved from phase C to phase B in fiscal year 1954 and investigations initiated for preparation of a definite plan report which is scheduled for completion in fiscal year 1955.

28. Devils Lake unit, North Dakota

The Devils Lake unit is that part of the Missouri-Souris division beginning with a canal along the eastern edge of the Crosby-Mohall unit and ending at the headwaters of Jamestown Reservoir near Juanita, N. Dak. Return flows from the Crosby-Mohall irrigable lands will be diverted to the Sheyenne Reservoir on the Sheyenne River. The Devils Lake feeder canal will divert water from Sheyenne Reservoir into Devils Lake, providing long-awaited restoration of this lake to a beneficial level for recreational and other uses. Water not lost by evaporation in the lake will be returned to the Sheyenne River via Stimp Lake. This flow will furnish supplemental municipal water supplies to some 19 towns and cities along the Sheyenne and Red Rivers. The New Rockford unit of 55,000 acres will pump water out of the Sheyenne Reservoir for irrigation. The James River Canal will divert water from Sheyenne Reservoir to be impounded in Jamestown Reservoir for irrigation in the Jamestown and Oakes units, as well as for municipal and other use. Under the phase B and C programs, investigations are being made to determine if water can be diverted more economically from Garrison Reservoir than from the Missouri diversion dam in Montana, as originally planned for portions of Missouri-Souris division. If this is found to be the case, some of the features named herein will be replaced by others.

In fiscal year 1954, following completion of the Missouri-Souris and Garrison division reports (phase C), detailed studies will be initiated on specific features

of the unit to compile data required for the definite plan report presently scheduled for completion in January 1956.

29. Crosby-Mohall unit, North Dakota

This unit, located in northern North Dakota, would provide for irrigation of about 1,000,000 acres of land now dry-farmed. The original plan of development contemplated irrigation of this land with water diverted from the Missouri River below Fort Peck Reservoir and carried by canal to Medicine Lake of the Missouri diversion unit, which would provide water for the Crosby-Mohall unit by pumping through Grenora pumping plant. Water would be delivered to the unit by means of the 107-mile-long Souris Canal, dropping through Crosby and Des Lacs powerplants, thereby generating electrical energy which will be used at the Grenora pumping plant. A bypass from the Souris Canal above the Crosby powerplant will deliver water to Crosby Reservior for storage to meet irrigation demands and to assist in the generation of electrical energy at Des Lacs powerplant. Return flows from the Crosby-Mohall area will be collected and used for municipal and irrigation purposes in the central and eastern portions of the State and for the restoration of Devils Lake located in northeastern North Dakota. Unused return flows will be channeled back to the Missouri River via Jamestown Reservoir and the James River. A board of consultants appointed by the Bureau and the State of North Dakota has made a study of, and reported on arability of, lands west of the Des Lacs River. As a result of these studies, lands in the western end of the unit have been eliminated from the plan because they are not considered suitable for irrigation development on account of extremely difficult drainage conditions. These lands eliminated have been replaced largely with lands in the eastern portion of the unit. In connection with the investigations of the Garrison division, alternate possibilities of serving the irrigable lands in the Crosby-Mohall unit are being thoroughly investigated. The potential Crosby-Mohall unit could provide irrigation for a very large block of land in the northern Great Plains which is a semiarid to subhumid area subject to extremes in weather and variations in rainfall.

This unit is in an area where irrigation is relatively new and unproven. Consequently the problems that arise in the planning for irrigation in this area are exceptionally difficult. One of the particularly difficult problems in this area is drainage under conditions after development of irrigation. Another difficult problem is the selection of the best lands and the best route for the long diversion canals from the several potential alternatives. The satisfactory solution of these difficult problems necessitates complete detailed study and analysis which is in progress. These studies will continue in fiscal year 1954, and will require a number of years to complete.

STATEMENT ON PHASES C AND D INVESTIGATIONS ON THE GENERAL PLAN OF DEVELOPMENT IN THE MISSOURI RIVER BASIN PROJECT

FISCAL YEAR 1954 ESTIMATE $2,000,000 REVISED ESTIMATE

Phase C investigations of the Missouri River Basin develop the general plan and an orderly program for the best use of the resources of the area. These investigations are programed generally on a division of subbasin basis. Units of the comprehensive basin plan are being developed to accomplish multipurposes of irrigation, power, water for municipal or industrial purposes, navigation, sediment control, recreation, pollution abatement, and flood control. Some features in the basin have been completed and others are under construction now. It is necessary, however, to continue simultaneously the program of investigations of the general plan of development and to initiate unit investigations from time to time to insure an orderly basin development and the best use of the water resources of the area.

The investigations consist of continuing review of and additions to the data collected by previous surveys, compiling of current economic data, land classification, topographic surveys of selected areas, preliminary drilling of dam sites, preliminary field location of canals and structures, preparation of maps, charts and graphs as required for analysis and report purposes, and preparation of preliminary cost estimates. Power studies are made to obtain essential data and to perform work on the long-range planning and programing of the electric generating and transmission facilities of the Missouri River Basin project. By these studies, a determination is made of the economy and adequacy of planned facilities for transmitting wholesale power, for which the Bureau is the marketing agent, from Federal generating plants constructed either by the Bureau or the

Corps of Engineers to load centers and project irrigation pumping facilities. Continued coordination work between the Bureau of Reclamation and the Corps of Engineers (phase D) is in progress. This is required for perfection of plans to insure the optimum development of irrigation, power, flood control, navigation, and other multiple water use functions of the Missouri River Basin project. Activities of the Interior Missouri Basin Field Committee also are financed with phase C funds.

On June 30, 1952, reconnaissance surveys had been completed for nearly all the Missouri River Basin and more refined studies were under way in many areas where reconnaissance surveys showed that additional study was warranted. Work on irrigation aspects of possible developments had been virtually completed in several divisions. A report has been prepared presenting a comprehensive plan for the Lower Platte River Basin in Nebraska. The report on the Niobrara River Basin is scheduled for completion at the end of fiscal year 1953. Reports on the LaPrele unit, and on potential enlargements of Seminoe and Guernsey Reservoirs also are scheduled for completion in fiscal year 1953. Investigations of a number of other subbasins and divisions of the project are in progress. As a result of the completion of the investigations of the Lower Platte River Basin, Nebr., in fiscal year 1954, Phase C investigations will be initiated on the Columbus, Grand Island, and North Loup Division of the basin in fiscal year 1954. Phase C investigations will continue on 19 other divisions and basins. This makes a total of 22 phase C investigations active in fiscal year 1954, compared with 28 active in fiscal year 1953. Some of the investigations active in fiscal year 1953 are being deferred in fiscal year 1954 in order to concentrate the funds available on fewer investigations in order to advance further those upon which funds are being expended and thus make better use of the limited amount of funds. Reports on the Cannonball and Clarks Fork Divisions and the Niobrara River Basin are scheduled for completion in fiscal year 1954.

The $2,000,000 requested in fiscal year 1954 for phases C and D is $472,220 less than the total obligations program for fiscal year 1953 (a reduction of 19 percent) and represents a minimum program for these important investigations. New and difficult problems are being encountered in extending reclamation to the Northern Great Plains area. The general problems, as well as the perfecting of the general physical plans, must be studied and special techniques and adaptations of irrigated agriculture devised for the particular climatic conditions of the Plains. These investigations provide the information and data necessary for the establishment of a sound overall plan of development for the basin as well as for the individual units. These investigations permit the selection of those units whose economic feasibility, location, and contribution to the achievements of the goals of basin development warrant their advancement into the preconstruction state.

Phase C funds are urgently needed for the further development of the Garrison diversion unit in North Dakota; the James River division, the North and South Platte River Basins, and many smaller subbasins in order to insure development at some future time.

Mr. JENSEN. You are requesting $73,511,000 for the Missouri River Basin projects in the 1954 budget, which is over $9 million more than was programed in 1953; is that right?

Mr. LINEWEAVER. Yes, sir, that is about right. The program last year was $64,317,476, and the proposed program for 1954 is $73,511,000.

ESTIMATE FOR OPERATION AND MAINTENANCE

Mr. JENSEN. You are asking for a total of $3,571,743 for operation and maintenance; is that right?

Mr. LINEWEAVER. Yes, sir. This is the first time, Mr. Chairman, that the operation and maintenance item for the Missouri Basin has been prepared in this form. We have been negotiating with the Bureau of the Budget for several years on that proposition. We were not prepared to set it up that way with respect to power and irrigation and flood control until this year. We worked out the estimate

of more than $3 million and then set it up as a separate item, which is shown in the following justification.

(The matter referred to is as follows:)

OPERATION AND MAINTENANCE

Summarized financial data

Total, fiscal year 1952	
Allotment, fiscal year 1953	[1] $2,348,082
Total obligations, 1953	[1] 2,348,082
Fiscal year 1954:	
Allotment	3,571,743
Advances by water users	5,000
Total obligations, 1954	3,576,743

[1] Consists of $962,582 of construction and rehabilitation funds allotted to Missouri River Basin project for operation and maintenance (phase E) and $1,385,500 allotted to the following projects but scheduled under Missouri River Basin for integrated power operations: Colorado-Big Thompson ($843,250), Riverton ($45,750), Shoshone ($100,800), and Kendrick ($395,700).

JUSTIFICATION OF ESTIMATE

Location

The developments of the Missouri River Basin project are located within the drainage basin of the Missouri River in the States of Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, and Kansas.

General Conditions

Construction of selected units and divisions of the Misouri River Basin project has been in progress since 1947. As these units, or parts thereof, reach functional completion they are placed in operation to allow residents of the area to receive the benefits of the development, at the earliest possible date and to initiate return to the government on the reimbursable portion of its investment in project works. Current repayment of operation and maintenance costs and eventual repayment of the reimbursable allocation of construction costs is obtained through water service and repayment contracts with water users' organizations and by sale of power to preference customers. During the early stages of irrigation development, water rental charges will be established to encourage the economical use of water and, when practicable, a formal development period will be established for each uit. During this period the water users will be assisted in establishing a permanent organization to assume responsibility for the operation and maintenance activity. The minimum water charges collected during the development period will cover the operation and maintenance of those facilities necessary to serve the land involved. After the unit has commenced repayment of construction the Bureau will collect from water users or water users' organization the funds required to operate such works.

Effective as of July 1, 1952, all of the completed transmission facilities of the Riverton, Kendrick, Shoshone and Colorado-Big Thompson project which are physically interconnected features in the basin were integrated from an operation and maintenance standpoint with the transmision facilities of the Missouri River Basin in that general area in the interest of greater econcy, efficiency, and reliability of service. In fiscal year 1953 the integrated western division of the transmission system is being operated with construction and rehabilitation funds appropriated for operation and maintenance of Missouri River Basin project facilities and operation and maintenance funds appropriated for the transmission systems associated with the Riverton, Kendrick, Shoshone, and Colorado-Big Thompson projects. The funds requested under this heading are for the operation and maintenance of the completed multipurpose, irrigation, and power facilities of 15 units or divisions of the Missouri River Basin project and the transmission facilities of the four other projects mentioned above whose systems comprise part of the integrated western division of the transmission system.

Work proposed, 1954

	Program, 1954	Increase (+) or decrease (−) from 1953
MULTIPURPOSE FACILITIES		
Storage system	$142,988	+$34,611
For the normal operation and maintenance of Angostura, Boysen, Canyon Ferry, Heart Butte, Shadehill, Dickinson, Keyhole, Bonny, Cedar Bluff, Enders, Medicine Creek, and Trenton Dams and Reservoirs. Increase is due to placing Canyon Ferry Dam and Reservoir in an operation-and-maintenance status and increased costs of labor and materials.		
Replacements and improvements	41,800	+34,300
For normal replacements and improvements for storage reservoirs. Increase is due to placing Canyon Ferry Dam and Reservoir in an operation-and-maintenance status and to increased cost of labor and materials.		
Total obligations, multipurpose facilities	184,788	+68,911
IRRIGATION FACILITIES		
Carriage system	191,845	+50,876
For normal operation and maintenance of the carriage systems of the Angostura, Crow Creek, Fort Clark, and Heart Butte units, and the Bostwick and Frenchman-Cambridge division. These facilities will serve about 52,000 acres of land. The increase in fund requirement is due primarily to an increase in the irrigable acreage as follows: Angostura unit 8,154 acres; Bostwick division, 9,547 acres; and Frenchman-Cambridge division, 6,200 acres, Crow Creek unit, 2,500 acres, Heart Butte unit, 800 acres, Fort Clark unit, 1,300 acres.		
Distribution system	65,459	+44,485
For the normal operation and maintenance of distribution facilities to serve about 52,000 acres of land on the Angostura, Crow Creek, Fort Clark, and Heart Butte units, of the Bostwick and Frenchman-Cambridge divisions. Increase is due primarily to an increase of about 28,500 acres of land receiving water for the first time in fiscal year 1954.		
Drainage system	3,195	+2,833
For normal operation and maintenance of the drainage facilities for 16,150 acres of land under irrigation on the Angostura, Crow Creek, and Fort Clark units.		
Replacement and improvements	6,800	+2,600
For normal replacements and improvements to adequately maintain the irrigation facilities in efficient operating condition.		
Total obligations, irrigation	267,299	+100,794
POWER FACILITIES		
Electric generation	266,300	+71,700
For the normal operation and maintenance of the Angostura, Boysen, Canyon Ferry, and Kortes powerplants. The total capacity of these four plants is 102,200 kilowatts. The increase is due to placing Canyon Ferry powerplant in an operating status, a full year of operation of the Boysen powerplant, and increased requirement for wages, salaries, and maintenance expense.		
Other production expense	901,050	+376,050
For purchase of power. Increase is due to higher requirements for purchase of power to meet the additional load requirements in the area.		
Transmission and distribution	1,749,006	+492,156
For normal operation and maintenance of the interconnected transmission system consisting of approximately 4,400 miles of high-voltage transmission lines and approximately 1,006,000 kilovolt-amperes of substation capacity. Increase is due to the addition in fiscal year 1954 of about 250 miles of transmission line and about 344,000 kilovolt-amperes of substation capacity, increased load dispatching requirements, increases in wheeling costs over private systems and increases in wages, salaries, and maintenance expenses.		
Replacements and improvements	208,300	+119,050
For replacement of vehicles, equipment, and other general property necessary for the operation and maintenance of the integrated transmission system and for replacements and improvements on system lines and substations. Increase results primarily from the increase in transmission mileage and substation capacity.		
Total obligations, power	3,124,656	+1,058,956
Total obligations, all facilities	3,576,743	+1,228,661

Schedule of operation and maintenance program, fiscal years 1952, 1953, and 1954

Program item	Total, prior year 1952	Program, current year 1953	Program, budget year 1954
(1)	(2)	(3)	(4)
MULTIPURPOSE FACILITIES			
Operation and maintenance: Storage system		$108,377	$142,988
Replacement and improvements		7,500	41,800
Total obligations, multipurpose facilities		115,877	184,788
IRRIGATION FACILITIES			
Operation and maintenance:			
Carriage system		140,969	191,845
Distribution system		20,974	65,459
Drainage system		362	3,195
Replacements and improvements		4,200	6,800
Total obligations, irrigation facilities		166,505	267,299
POWER FACILITIES			
Operation and maintenance:			
Electric generation		194,606	236,300
Other production expense		525,000	901,050
Canyon Ferry			(2,000)
Transmission system: Western division		(525,000)	(899,050)
Transmission and distribution expense		1,256,850	1,749,006
Transmission system:			
Eastern division		(257,900)	(519,356)
Western division		(998,956)	(1,229,650)
Replacements and improvements		89,250	208,300
Electric generation		(12,000)	(30,800)
Transmission system:			
Eastern division		(1,500)	(18,500)
Western division		(75,750)	(159,000)
Total obligations, power facilities		2,065,700	3,124,656
Total obligations, all facilities		2,348,082	3,576,743
Allocation:			
Irrigation		186,259	290,192
Power		2,073,350	3,172,486
Municipal water		1,000	1,300
Flood control		69,433	90,059
Recreation		7,160	9,653
Fish and wildlife		10,880	13,053
Total obligations		2,348,082	3,576,743
Method of financing:			
Allotment		2,348,082	
Allotment required			3,571,743
Funds advanced by water users			5,000

BOSTWICK DIVISION, NEBRASKA, KANSAS

Mr. JENSEN. We now come to the Bostwick Division, Nebraska-Kansas. We will insert at this point in the record the special data furnished by the Bureau to the committee on this project and pages 486 through 490 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION, AND OPERATION AND MAINTENANCE, BOSTWICK DIVISION, NEBRASKA-KANSAS

Construction

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$9,490,612	$4,298,992	$4,500,000
Unliquidated obligations	701,015	−384,586	
Total obligations	10,191,627	3,914,406	4,500,000

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures		$96,560	$131,220
Total obligations		96,560	131,220
Appropriation or estimate		[1] 96,560	131,220

[1] Appropriated under "Construction and rehabilitation for Missouri River Basin, phase E," but shown in United States budget, 1954, as a comparative transfer to "Operation and maintenance."

HISTORY OF PROJECT DEVELOPMENT

Location

South central Nebraska and north central Kansas. Project works extend east and south along the Republican River from Harlan County Dam, under construction by the Corps of Engineers, to lands adjacent to Concordia, Kans.

Purpose

Irrigation, flood control, fish and wildlife conservation, and recreation.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887), and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1938.
Advanced planning, 1946.
Construction, March 1949.
Date of functional completion of construction, fiscal year 1959, except for the Red Cloud pumping plant, canals and laterals, which are indefinitely deferred.
Fiscal year and amount of initial allotment of appropriation for construction, 1948, $307,031.

Costs

Original estimated cost	$8,104,000
Allocation of cost: Unallocated	8,104,000
Present estimated cost	55,942,000
Allocation of cost:	
Irrigation	53,508,000
Flood control	2,292,000
Fish and wildlife	28,000
Recreation	114,000

REPAYMENT

Status of repayment contract negotiations

Contracts have been executed with Kansas Bostwick Irrigation District No. 2, and with Nebraska Bostwick Irrigation District. Contract negotiations will be required for Scandia area in Kansas when that area reaches the development stage.

Amount to be repaid and repayment period

The distribution system repayment obligation of the Kansas Bostwick District is $3,500,000 and of the Nebraska Bostwick District $2,260,000. Payments will be made in 40 years after completion of construction and the close of 5-year development periods. Additional payments will be made by both districts through the construction component in water-service charges, and through the execution of payment contracts for the Scandia area.

Repayment of costs allocated to irrigation

Water users	$14,302,400
Missouri River Basin project pooled power revenues	39,205,600
Total	53,508,000

Repayment costs per acre

Federal investment per acre	$599.00
From water users	160.00
From power revenue	439.00
Annual water user charges per acre:	
Construction	2.10
Operation and maintenance	3.65
Total	5.75

Increased net income per acre resulting from project irrigation (payment capacity) $7.65.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres): full				89,390
Total				89,390

Personnel

Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954: Included in consolidated statement for Missouri River Basin project, operation and maintenance.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$56,005,322
Total obligations to June 30, 1952	10,191,627
Allotment, fiscal year 1953	2,364,094
Prior year balance available	1,550,312
Total obligations, fiscal year 1953	3,914,406
Allotment, fiscal year 1954	4,500,000
Total obligations, fiscal year 1954	4,500,000
Balance to complete	37,399,289

JUSTIFICATION OF ESTIMATE

Location

The Bostwick division is located in south central Nebraska and north central Kansas. Project works extend east and south along the Republican River from Harlan County Dam, under construction by the Corps of Engineers, to lands adjacent to Concordia, Kans.

Description

The Bostwick division is a multiple purpose project to provide irrigation, regulation of stream runoff for flood control in the lower Republican and Kansas River basins, fish and wildlife conservation, and recreation. Facilities of the project include Harlan County Dam and Reservoir with a total storage capacity of 850,000 acre-feet; Lovewell Dam and Reservoir, with a total storage capacity

of 94,000 acre-feet; 3 diversion dams, 4 electric pumping plants; canals, subcanals, laterals and drains for effective irrigation of 90,000 acres of rich bottom lands and table lands.

Repayment

A contract has been executed with the Nebraska Bostwick Irrigation District for the payment of construction costs of the Nebraska portion amounting to $2,260,000. A contract has also been executed with the Kansas Bostwick Irrigation District No. 2 for the payment of construction costs for laterals and drains for the Kansas portion amounting to $3,500,000. An injunction was granted by the district court at Belleville, Kans., and later appealed to the Kansas Supreme Court. The supreme court reversed the lower court's decision and directed confirmation of the repayment contract. The lower court approved the confirmation of the repayment contract February 4, 1952.

Status

Construction of Bureau of Reclamation works in the Bostwick division began in March 1949. As of June 30, 1953, the project will be approximately 25 percent complete. Construction will be complete on Superior-Courtland Diversion Dam, Superior Canal and Laterals, the Nebraska portion of the Courtland canal and lateral system and the Franklin south side pumping plant, canal and lateral system. Construction will be under way on the first section of the Franklin canal and lateral system, the second section of Courtland canal, and the Naponee canal and lateral system. Preconstruction operations will be in progress on the Lovewell Dam and Reservoir, second section of Courtland laterals, and Courtland canal and lateral system adjacent to Lovewell Dam. Project investigations in connection with all remaining features will be in progress.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes continuation of construction on the Franklin canal and lateral system, the Courtland canal and lateral system, and the Naponee canal and lateral system. Preconstruction work will be continued on the Lovewell Dam and Reservoir, which has been redesigned to provide additional flood storage, the Courtland canal below Lovewell Dam and remaining portions of the Franklin canal and lateral system. Project investigations will continue on some remaining features.

Justification

The controlling of floodwaters flowing over irrigable land in this vicinity as well as in the lower Republican River Basin would put much inundated land in classification I or II which would increase the present irrigable acres. The necessity for irrigation water during several of the past seasons and especially during this 1952 irrigation season has become increasingly acute. The abundant production of food and byproducts which will be made possible by the irrigation of lands in the Bostwick division will contribute immeasurably to the defense effort. It will be necessary to continue construction of all features at the rate shown on the schedules in order to permit the maximum benefit to be derived from the project.

The total estimated cost of the Bostwick division has been increased from $47,930,000 to $55,942,000 (anticipated total obligations $56,005,322). This cost increase is attributable to increased construction costs, redesign of Lovewell Dam and Reservoir to provide additional flood storage, and addition of canal protective facilities.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Lovewell Dam and Reservoir	$11,159,000	$209,516	$140,000	$100,000	$10,709,484
Superior-Courtland diversion dam	1,850,000	1,680,032	169,968		
Republic diversion dam	2,156,000	65,250			2,090,750
Scandia diversion dam	2,678,000	67,688			2,610,312
Franklin South Side pumping plant	128,000	75,640	52,360		
Red Cloud pumping plants	104,000	5,631			98,369
Naponee Canal	467,000	40,339	61,000	365,661	
Franklin Canal	6,695,000	468,550	1,883,000	1,854,000	2,489,450
Franklin south side pump canal	313,000	222,671	90,329		
Red Cloud pump canals	237,000	21,775			215,225
Superior Canal	2,289,000	2,221,032	67,968		
Courtland Canal	9,816,000	2,535,499	1,418,000	1,393,000	4,469,501
Hardy Canal (formerly Republic West Canal)	162,000	24,995			137,005
Republic Canal (formerly Republic East Canal)	1,449,000	83,552			1,365,448
Scandia Canal	1,708,000	31,790			1,676,210
Naponee laterals	35,000	5,620	7,000	22,380	
Franklin laterals	1,623,000	86,370	221,000	704,000	611,630
Franklin south side pump laterals	103,000	41,020	61,980		
Red Cloud laterals	5,000	1,219			3,781
Superior laterals	563,000	555,493	64,587		−57,080
Courtland laterals (Nebraska)	329,000	213,021	10,000		105,979
Courtland laterals (Kansas)	3,194,000	135,225	78,000	100,000	2,880,775
Hardy laterals (Republic west laterals)	120,000	3,091			116,909
Republic laterals (Republic east laterals)	562,000	10,637			551,363
Scandia laterals	1,020,000	20,159			999,841
Franklin unit drainage	989,000	18,128			970,872
Superior-Courtland unit drainage	3,536,000	73,012			3,462,988
Republic unit drainage	851,000	13,795			837,205
Scandia unit drainage	1,272,000	25,444			1,246,556
Farm unit development	81,000	4,617	8,000	9,000	59,383
General service equipment	254,000	60,546			193,454
Lovewell recreation development	142,000				142,000
Superior service area	52,000				52,000
Total cost	55,942,000	9,021,357	4,333,192	4,548,041	38,039,410
Construction facilities		114,248	−44,200	−70,048	
Stores		57,407		22,007	−79,414
Project investigations			10,000		−10,000
Operation and maintenance during construction	63,322	63,322			
Transfers, credits and other expenditures		234,278			−234,278
Total expenditures	56,005,322	9,490,612	4,298,992	4,500,000	37,715,718
Unliquidated obligations		701,015	−384,586		−316,429
Total obligations	56,005,322	10,191,627	3,914,406	4,500,000	37,399,289
Method of financing:					
Allotment, fiscal year 1953			2,364,094		
Prior year balance available			1,550,312		
Allotments required				4,500,000	37,399,000

Mr. JENSEN. Your request is for $4,500,000 for fiscal 1954.

Mr. LINEWEAVER. Yes, sir; I have a statement on operation and maintenance and Mr. Markwell has a statement on Bostwick construction.

Mr. JENSEN. Without objection, we will receive the statements for the record at this point.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

BOSTWICK DIVISION, MISSOURI RIVER BASIN PROJECT

The Bostwick division is planned to provide irrigation water for 89,390 acres of land in Nebraska and Kansas from storage in the Harlan County Dam recently

completed by the Corps of Engineers. The project will consist of 1 other storage dam, 3 diversion dams, pumping plants, canals, laterals, drains, and other necessary facilities, and will be approximately 25-percent complete by the end of fiscal year 1953. During fiscal year 1953, construction is under way on the various canals and laterals and pumping plants.

Funds requested for fiscal year 1954 will be used for continuation of construction on the Franklin, Courtland, and Naponee Canals and laterals. Preconstruction work will be continued on the Lovewell Dam and the remaining portions of the Franklin Canal and lateral system. Work programed for the year must continue as scheduled in order to provide irrigation water as planned to the lands of the project whose products are needed for support of a strong national economy.

Accomplishment of the maximum possible work during fiscal year 1954 is particularly desirable in order to make the best use of Government funds expended to date by both the Bureau of Reclamation and the Corps of Engineers and to avoid the possibility of destroying the feasibility of the division as a whole. A contract has been executed with potential water users which provides for annual assessments to established Nebraska-Bostwick and Kansas-Bostwick irrigation districts. Most of the assessments are being paid on the premise that water delivery will be made at the earliest possible date consistent with the most feasible construction progress. To delay construction would encourage water users to petition out of the district in order to eliminate these assessments, thereby weakening the whole construction repayment structure which has been built only with considerable effort. Another serious complication is that for water users now receiving water, the operation and maintenance costs are high and will continue to be high until more lands are brought under irrigation.

Any delay in the construction program would lead to serious consequences as the need for irrigation water during the past several seasons, especially during the 1952 irrigation season, forecasts a potentially meager feed and livestock situation. Irrigated areas in the vicinity of the division along the Republican River would preclude this anticipated critical shortage.

The Bostwick division, located in south central Nebraska and north central Kansas, will receive storage water from the Harlan County Reservoir, located on the Republican River, and Lovewell Reservoir, which will be located on White Rock Creek 2 miles northwest of Lovewell, Kans.

The division is a multiple-purpose project involving irrigation, flood control, and other benefits. Two storage dams will be constructed. The Harlan County Dam is under construction by the Corps of Engineers and operation releases of irrigation water will be made to the division upon requests made to the corps. Lovewell Dam is proposed for construction and will provide regulatory storage for the Courtland Canal and prevent waste of water. Ultimate developmen will irrigate approximately 28,000 acres in Nebraska and 61,390 acres in Kansas.

An appropriation of $131,220 is requested for operation and maintenance of irrigation facilities of the Bostwick unit during fiscal year 1954, including the diversion dam and carriage systems and the distribution system.

Mr. JENSEN. This project is about 25-percent complete; is it not?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. The water users are scheduled to pay $14,302,400; is that right?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. There is no direct power in this project; is there?

Mr. LINEWEAVER. Not directly, but it is a unit of the Missouri Basin which shares through the financing of the overall power combination of power and irrigation.

Mr. JENSEN. The basin power fund is to repay $39,205,000?

Mr. LINEWEAVER. That is right.

Mr. JENSEN. At this stage, it is feasible as an irrigation project, but was not this project asked for as a flood-control project?

Mr. LINEWEAVER. No, sir; not Bostwick. Bostwick is located in both Nebraska and Kansas, and it is in what we call a subhumid area where the rainfall is intermittent and according to the records for

many years, is not sufficient to stabilize the agriculture in the area. The people in both Nebraska and Kansas have been busy for a good many years trying to get the Bostwick project started.

We negotiated the repayment contract, based on their ability to repay, and, as a result of that, the project construction was started. The water for the Bostwick comes from the Harlan County Dam that was constructed by the Corps of Engineers and that has made possible the regular supply of water for both the Nebraska and Kansas area.

Mr. JENSEN. I believe there is litigation at the present time, is there not, in the Kansas Supreme Court, or has that decision been made with reference to the repayment contract on this project?

Mr. LINEWEAVER. The decision has been made and the contract has been executed with the Kansas district as well as the Nebraska area district.

Mr. EATON. It has been executed. The Supreme Court directed a confirmation of the contract. The Kansas Supreme Court reversed the lower court and the supreme court has sustained the validity of the contract.

Mr. JENSEN. Who challenged the contract?

Mr. EATON. Certain of the landowners within the irrigation district challenged the validity of the contract.

Mr. JENSEN. On what grounds?

Mr. EATON. I believe they challenged it on the ground of the propriety of the irrigation district to obligate their lands for repayment, whether there was authority in the irrigation district to execute a contract that obligated them to repay and to test the constitutionality of certain Kansas water laws. When the case went to the State supreme court, the supreme court sustained the validity of the contract.

Mr. JENSEN. Do you feel that the litigation that has been under way regarding this project has all been cleared up so that Congress is fully justified in carrying on the project, as scheduled?

Mr. EATON. Yes, sir.

Mr. JENSEN. Any questions?

Mr. BUDGE. No, sir.

Mr. LINEWEAVER. In order to make the record complete, I would like to submit a brief statement, amplifying Mr. Eaton's statement on that litigation. It is quite important, because it also sets the stage for other irrigation district contracts in Kansas and I think it should be in the record as to precisely what was done.

(The statement is as follows:)

VALIDATION OF WATER SERVICE AND REPAYMENT CONTRACT, KANSAS-BOSTWICK IRRIGATION DISTRICT, MISSOURI RIVER BASIN PROJECT

Validation of the water service and repayment contract with the Kansas-Bostwick irrigation district No. 2 represented an important development of far-reaching significance to the reclamation program in Kansas. This was the first Missouri River Basin project contract to be tested in the Kansas courts.

Following execution of the contract on April 20, 1951, the Kansas district initiated court validation proceedings in the district court of Republic County, Kans. On July 19, 1951, this court declared that amendments of certain Kansas water laws were unconstitutional, and enjoined the district from making levies or assessments as provided in the contract before the court. In the appeal to the Kansas Supreme Court, the supreme court upheld the constitutionality of the statutes in question, and the district court was instructed to validate the contract. Contract validation took place on February 4, 1952. An attemped appeal to the United States Supreme Court was unsuccessful.

Approval of the Bostwick contract thus clears the way for the negotiation and execution of other similar contracts for units of the Missouri River Basin project in Kansas.

Mr. JENSEN. I am glad you mentioned that, because, no doubt, it will have a bearing on other contracts in the future, as well as present contracts.

CANYON FERRY UNIT, MONTANA

Mr. JENSEN. The next item is the Canyon Ferry unit in Montana. We will insert in the record at this point the special data requested of the Bureau as contained on pages 89 and 90 and justification pages 493 through 496.

(The matter referred to is as follows:)

CONSTRUCTION AND OPERATION AND MAINTENANCE

Construction

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$19,331,575	$7,760,436	$1,957,000
Unliquidated obligations	2,309,392	−1,309,392	−1,000,000
Total obligations	21,640,967	6,451,044	957,000

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures			$108,700
Total obligations			108,700
Appropriation or estimate			108,700

HISTORY OF PROJECT DEVELOPMENT

Location

Main stem of the Missouri River in west central Montana, about 17 miles east of the city of Helena.

Purpose

Irrigation, flood control, regulation of the flow of the Missouri River, and generation of electrical energy.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887), and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2nd Session.

Initial date

Planning, 1939.
Advanced planning, 1946.
Construction, 1948.
Missouri River Basin project, Canyon Ferry unit, Montana, 2.
Date of functional completion of construction, Fiscal Year 1954.
Fiscal Year and amount of initial allotment of appropriations for construction, Fiscal Year 1948, $695,073.

COSTS

Original estimated cost	$11,025,000
Allocation of cost, unallocated	11,025,000
Present estimated cost	29,036,000
Allocation of cost:	
Irrigation	11,741,000
Power	13,511,000
Flood control	3,636,000
Fish and wildlife	4,000
Recreation	144,000

REPAYMENT

Status of repayment contract negotiations.

No direct irrigation development.

Amount to be repaid and repayment period.

No direct payment by irrigators.

Some indirect payment will be made by irrigators through purchase of power for irrigation pumping.

The power allocation will be repaid within 50 years from the date the facility becomes revenue producing. All project revenues are consolidated to achieve project-wide payout of reimbursable construction costs. Irrigation, fish and wildlife, and recreation allocations are considered reimbursable and are to be repaid by the beneficiaries or from power revenues and application of interest components related to interest bearing investments.

Repayment of costs allocated to irrigation: Missouri River Basin project pooled power revenues, $11,741,000; total, $11,741,000.

OPERATIONS

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Power (kilowatts)			50,000	50,000
Power rates (mills per kilowatt-hour):				
Firm at 50-percent load factor			$5.5	$5.5
Nonfirm (average)			$3.0	$3.0

Personnel—Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954: Included in consolidated statement for Missouri River Basin project operation and maintenance.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$29,187,311
Total obligations to June 30, 1952	21,640,967
Allotment, fiscal year 1953	4,754,000
Prior year balance available	1,697,044
Total obligations, fiscal year 1953	6,451,044
Allotment, fiscal year 1954	957,000
Total obligations, fiscal year 1954	957,000
Balance to complete	138,300

JUSTIFICATION OF ESTIMATE

Location

The Canyon Ferry Dam is on the main stem of the Missouri River in west central Montana, about 17 miles east of the city of Helena.

Description

The Canyon Ferry unit is a multiple-purpose development which will provide for irrigation, the control of floods, regulation of the flow of the Missouri River, and generation of electrical energy. Principal features of the unit are the dam

and reservoir and powerplant. The reservoir will have a storage capacity of 2,043,000 acre-feet. The only direct irrigation provided by the construction of the dam and reservoir will be in connection with the Helena Valley unit of the Helena-Great Falls division which will receive water pumped from the reservoir. Power will also be wheeled initially over lines of the Montana Power Co. to the Crow Creek pump unit. The powerplant will generate 50,000 kilowatts to be integrated into a power system with other Federal projects for which the Bureau of Reclamation is the marketing agent. Initial gross powerplant output is estimated at 320 million kilowatt-hours annually, decreasing over the years in accordance with irrigation diversion requirements to 263,500,000 kilowatt-hours.

Status

Construction began on the unit in fiscal year 1948 with construction of a Government camp and the relocation of roads in the reservoir. Construction of the dam and powerplant was started in fiscal year 1949. As of June 30, 1953, the Canyon Ferry unit will be 91 percent completed. During the fiscal year 1953, additional concrete will be placed in the dam, spillway, and powerplant. Installation of equipment, such as turbines and generators, will be in progress. Work on the dam will be substantially complete. Most of the allotment for fiscal year 1953 will be required for payments on construction contracts and for payments on materials and equipment furnished by the Government. Right-of-way acquisition will be completed and reservoir clearing will be about complete. Twenty-five percent of the habitat development, as proposed by the Fish and Wildlife Service, is to be completed.

Work proposed, fiscal year 1954

Construction on the Canyon Ferry Dam and powerplant will be complete. Installation work will be complete and the entire unit will be 99 percent complete at the close of the year. Payments will continue to be made on contracts for construction and materials and equipment furnished by the Government. Work will be continued on the fish and wildlife habitat development. Minimum sanitary facilities necessary for protection of the reservoir will be constructed.

Justification

The unit is the key to further irrigation development in the Upper Missouri Basin since low cost power is necessary for irrigation pumping. In order to commence water storage and produce power as scheduled, it will be necessary that the construction and installation programs continue uninterrupted. Power generation is to start in the second quarter of fiscal year 1954.

The total estimated cost has been decreased from $29,491,000 to $29,036,000 (anticipated total obligations $29,187,311). This decrease is principally the net result of less foundation work on Canyon Ferry Dam and an increase in costs for powerplant materials and equipment.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Canyon Ferry Dam and Reservoir	$19,671,000	$14,063,358	$4,643,000	$964,642	
Canyon Ferry powerplant	7,606,000	4,052,186	2,601,000	952,814	
Canyon Ferry switchyard	838,000	34,550	534,300	269,150	
General property	921,000	709,923	39,968	30,014	$141,095
Total cost	29,036,000	18,860,017	7,818,268	2,216,620	141,095
Construction facilities		401,588	−109,000	−110,309	−182,279
Stores		109,255	−6,741	−50,000	−52,514
Transfers, credits, and other expenditures	151,311	−39,285	57,909	−99,311	231,998
Total expenditures	29,187,311	19,331,575	7,760,436	1,957,000	138,300
Unliquidated obligations		2,309,392	−1,309,392	−1,000,000	138,300
Total obligations	29,187,311	21,640,967	6,451,044	957,000	138,300
Method of financing:					
Allotment, fiscal year 1953			4,754,000		
Prior year balance available			1,697,044		
Allotments required				957,000	138,300

Mr. McPHAIL. Mr. Chairman, the Canyon Ferry unit will be essentially completed in fiscal 1954. The first unit of the plant is due for operation in December 1953, the second in February 1954, and the last one in April 1954. I have a short statement for the record.

Mr. JENSEN. In each case, put a statement in the record on operation and maintenance.

Mr. McPHAIL. I also have a statement on operation and maintenance.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

The Canyon Ferry unit is a multiple-purpose development, the principal features of which are the Canyon Ferry Dam and powerplant located on the Missouri River 17 miles east of Helena, Mont. The powerplant and storage reservoir will make possible the maximum power development in the area above Fort Benton.

The powerplant consists of three 16,667-kilowatt geenrators giving an installed capacity of 50,000 kilowatts with an average annual power generation of 284 million kilowatt-hours. The Canyon Ferry powerplant will be used primarily to serve loads in central and western Montana and will be interconnected with the Fort Peck transmission system.

The $957,000 requested for fiscal year 1954 will be used primarily for the continuance of construction so that the dam and powerplant can be completed and initial power can be made available by December 1953.

OPERATION AND MAINTENANCE (POWER FACILITIES)

The funds for the operation and maintenance of the power features of the Canyon Ferry unit are included in the amount being requested for the operation and maintenance of the Missouri River Basin project.

Of the total allotment request of $3,172,486 for the normal operation and maintenance of the power features of the Missouri River Basin project for fiscal year 1954, $88,600 is for the Canyon Ferry unit. This is the first year that Canyon Ferry is in an operating status and no funds have previously been requested for the operation of this unit. The $88,600 therefore represents an increase over the requirements in fiscal year 1953.

Canyon Ferry Dam is located on the Missouri River in west central Montana, approximately 17 miles east of the city of Helena. This multiple-purpose project, scheduled for completion in September 1953, will make possible the irrigation of 310,000 acres of new land and supplemental irrigation of 196,000 acres of land with inadequate water supply above Canyon Ferry Dam on the Missouri River. The principal function of the Canyon Ferry Dam is to reregulate the Missouri River so as to permit upstream diversions for irrigation without interfering with water rights downstream from Canyon Ferry. The electric power installation at Canyon Ferry will have a capacity of 50,000 kilowatts, and the reservoir of 2,043,000 acre-feet capacity will, in addition, provide flood control, recreation, and fish and wildlife conservation benefits.

For the operation and maintenance of all project functions, except power, during fiscal year 1954, an appropriation of $20,100 is requested. This is apportioned as follows: Irrigation $300; flood control $16,500; recreation $2,000; fish and wildlife conservation $1,300.

CEDAR BLUFF UNIT, KANSAS

Mr. JENSEN. The next item is the Cedar Bluff unit. We will insert in the record at this point the special data furnished to the committee by the Bureau on this project and pages 498–501 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION AND OPERATIONS AND MAINTENANCE

Construction

	Actual as of June 30, 1952	Estimated 1953	Estimated 1954
Expenditures	$13,689,697	$191,958	$30,000
Unliquidated obligations	26,663	−26,663	
Total obligations	13,716,360	165,295	30,000

Operations and maintenance

	Actual 1952	Estimated 1953	Estimated 1954
Expenditures		$16,897	$15,559
Unliquidated obligations			
Total obligations		16,897	15,559
Less funds advanced by water users			
Appropriation or estimate		[1] 16,897	15,559

[1] Appropriated under construction and reclamation for Missouri River Basin, phase E but shown in United States Budget, 1954, as a comparative transfer to operations and maintenance.

HISTORY OF PROJECT DEVELOPMENT

Location

West central Kansas in Trego and Ellis Counties. Project lands extend east from Cedar Bluff Dam approximately 18 miles along the north side of the Smoky Hill River.

Purpose

Irrigation and flood control.

Authorization

Flood Control Act of December 22, 1944, (58 Stat. 887) and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate 247, 78th Congress, 2d session.

Initial date

Planning, 1941; advanced plannning, 1947; construction, April 1949.

Date of functional completion of construction. Dam and reservoir were functionally complete in September 1950. Irrigation facilities to be functionally complete in fiscal year 1958.

Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1948, $661,384.

COSTS

Original estimated cost	$7,611,000
Allocation of cost, unallocated	7,611,000
Present estimated cost	18,036,000
Allocation of cost:	
Irrigation	9,519,000
Flood control	8,293,000
Fish and wildlife	37,000
Recreation	187,000

REPAYMENT

Status of repayment contract negotiations: Repayment contract negotiations with the Cedar Bluff Irrigation District will be initiated when plans are cleared for construction of distribution system works in future years.

Amount to be repaid and repayment period: A 40-year repayment contract with not to exceed a 10-year development period will be negotiated to provide for the payment of distribution system costs assigned for payment by irrigation. Additional construction payments will occur in connection with a construction component in water-service charges to be paid by the water users' organization.

Repayment of costs allocated to irrigation

Water users	$2,268,000
Missouri River Basin project pooled power revenues	7,251,000
Total	9,519,000

Repayment cost per acre

Federal investment per acre	$828
Water users	197
From power revenue	631
Annual water user charges:	
Construction	[1] 2.83
Operation and maintenance	3.48
Total	[2] 6.31

[1] To return in full costs payable by water users. This rate of payment would necessitate an additional water service contract following initial 40-year repayment period to run for 30 years with construction component of $2.83 per acre.
[2] To allow for contingencies in payment capacity determination, annual water charge estimated to approximate 75 percent of increased payment capacity.

Increased net income per acre resulting from project irrigation (payment capacity), $8.41.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres): Full				11,500
Total				11,500

Personnel

Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954: Included in consolidated Statement for Missouri River Basin project operation and maintenance.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$18,060,750
Total obligations to June 30, 1952	13,716,360
Prior year balance available	165,295
Total obligations, fiscal year 1953	165,295
Allotment, fiscal year 1954	30,000
Total obligations, fiscal year 1954	30,000
Balance to complete	4,149,095

JUSTIFICATION OF ESTIMATE

Location

The Cedar Bluff unit is located in west central Kansas in Trego and Ellis Counties. Project lands extend east from Cedar Bluff Dam for approximately 18 miles along the north side of the Smoky Hill River.

Description

The major functions to be performed by the unit are irrigation and flood control. Facilities include Cedar Bluff Dam and Reservoir, Cedar Bluff pumping plant and

Cedar Bluff Canal and laterals. The Cedar Bluff Canal will irrigate 11,500 acres of farm land. In addition, exchange flood-control storage in Cedar Bluff Reservoir for irrigation storage in the downstream existing Kanopolis Reservoir will provide for irrigation of an additional 41,000 acres below Kanopolis Dam in Ellsworth, McPherson, and Saline Counties, Kans.

Repayment

The Cedar Bluff Irrigation District has been formed but a repayment contract has not been negotiated. Funds were made available for construction of Cedar Bluff Dam and Reesrvoir by the special flood-control appropriation of fiscal year 1948. Construction of irrigation features must await completion of the irrigation definite plan report, scheduled for March 1954, and consummation of a repayment contract projected for January 1955.

Status

Construction began on Cedar Bluff Dam April 1, 1949. Storage of water started in November 1950, and the dam was essentially complete by the following September. As of June 30, 1953, no work on the dam will remain uncompleted. No construction of irrigation facilities will have been undertaken, but the major part of the field work required for the development of a definite plan report will have been completed.

Work proposed, fiscal year 1954

Program for fiscal year 1954 provides for completion of the definite plan for irrigation facilities and operation of a development farm in the project service area.

Justification

Cedar Bluff Reservoir is presently impounding its full quota of irrigation water. This water can be put to its designed use on project lands only upon construction of the Cedar Bluff Canal and laterals. Any delay in the program proposed will therefore retard the achievement of the irrigated acreage with resultant loss of revenue to the Government and loss of potential food productivity. The nominal amount of funds requested for fiscal year 1954 will provide for the remaining studies necessary to firm up plan of development, which in time will lead to execution of repayment contract and allow initiation of construction of the irrigation facilities.

The total estimated cost of the unit has been decreased from $18,651,000 to $18,036,000 (anticipated total obligation, $18,060,750). This adjustment of the cost estimate is brought about by substantial underruns in quantities on the construction of Cedar Bluff Dam.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Cedar Bluff Dam and Reservoir	$13,516,000	$13,392,558	$152,737		−$29,295
Cedar Bluff pumping plant	493,000	559			492,441
Cedar Bluff canal	2,680,000	85,562			2,594,438
Cedar Bluff laterals	698,000	786			697,214
Cedar Bluff drains	233,000	259			232,741
Farm unit development	37,000	7,798	6,000	$6,000	17,202
General property	155,000	46,418			108,582
Cedar Bluff recreation development	224,000	17,730	21,000	5,000	180,270
Total cost	18,036,000	13,551,670	179,737	11,000	4,293,593
Construction facilities		106,605	−10,000		−96,605
Project investigations			22,221	19,000	−41,221
Operation and maintenance during construction	24,750	−701			25,451
Transfers, credits, and other expenditures		32,123			−32,123
Total expenditures	18,060,750	13,689,697	191,958	30,000	4,149,095
Unliquidated obligations		26,663	−26,663		
Total obligations	18,060,750	13,716,360	165,295	30,000	4,149,095
Method of financing:					
Prior year balance available			165,295		
Allotments required				30,000	4,149,000

Mr. JENSEN. Your request on this item is for $30,000 for 1954.

Mr. MARKWELL. Yes, sir. I have a brief statement on that, Mr. Chairman. The Cedar Bluff Dam is completed and did yeoman service out there in the recent floods. The $30,000 request is for completing a definite plan report for the irrigation features of the project.

Mr. LINEWEAVER. I have a prepared statement on the operation and maintenance at Cedar Bluff.

Mr. JENSEN. Without objection, we will receive the statements for the record.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

Flood control and irrigation are the major functions to be performed by the Cedar Bluff unit located in Trego and Ellis Counties, Kans. Construction of Cedar Bluff Dam and Reservoir, which are essentially completed, was initiated from funds made available by the special flood control appropriation of fiscal year 1948. In the June 1951 floods, this dam, while still unfinished, justified its construction as a flood-control structure by reducing flood flow from 23,000 cubic feet per second to 1,750 cubic feet per second, thus averting extensive property damage and possible loss of life.

Completion of the irrigation definite plan report is scheduled for March 1954, and consummation of the repayment contract is expected by January 1955. No construction of irrigation facilities is under way at the present time and none will be started until the repayment contract is signed.

The $30,000 requested for fiscal year 1954 are for completion of the irrigation definite plan report and operation of a development farm in the project service area.

CEDAR BLUFF UNIT, SMOKY HILL DIVISION

The Cedar Bluff Dam is on the Smoky Hill River, about 18 miles southwest of the city of Ellis, Kans.

A total nonreimbursable appropriation of $15,559 is requested for operation and maintenance of this multipurpose dam and reservoir during fiscal year 1954. This amount will be apportioned as follows: Flood control $9,335; fish and wildlife $3,112; recreation $3,112.

CROW CREEK PUMP UNIT, MONTANA

Mr. JENSEN. You are requesting $673,000 for the Crow Creek pump unit.

We will insert at this point in the record the special data requested by the committee from the Bureau and pages 503 through 506 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION AND OPERATION AND MAINTENANCE

Construction

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$152,515	$834,008	$673,000
Unliquidated obligations	120	−120	
Total obligations	152,635	833,888	673,000

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures			$6,075
Total obligations			6,075
Appropriation or estimate			6,075

HISTORY OF PROJECT DEVELOPMENT

Location

South of Crow Creek near its confluence with the Missouri River and the town of Toston, in southwestern Montana.

Purpose

Irrigation of 5,020 acres of new land.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887) and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1905.
Advanced planning, 1949.
Construction, 1952.
Date of functional completion of construction, fiscal year 1954.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1952, $100,000.

COSTS

Original estimated cost.[1]
Allocation of cost:
Three Forks division total cost not subdivided to show this portion.
Unallocated.[1]

Present estimated cost	$1,693,000
Allocation of cost irrigation	1,693,000

[1] Not available.

REPAYMENT

Status of repayment contract negotiations

Local farmers have been unable to form an irrigation district, but individuals have expressed a desire to enter into individual water service contracts.

Amount to be repaid and repayment period

Construction of irrigation facilities is proceeding without awaiting completion of contract arrangements in order that Canyon Ferry Reservoir may be operated at designed capacity. Pursuant to instructions received in fiscal year 1953 appropriations hearings, the Bureau is proceeding with construction and will make a report to Appropriations Committees this year with a view to further instructions on payment arrangements.

Repayment of costs allocated to irrigation:

Water users	([1])
MRBP pooled power revenues	$1,693,000
Total	1,693,000

[1] All of the estimated $5 per acre annual water charge will be required for meeting operation and maintenance costs (including energy for pumping) and no water user payments will be available for repayment of construction costs. In the event that the Crow Creek Unit (23,400 acres) is built sometime in the future and includes the 5,020 acres now comprising the Crow Creek pump unit which would be served during the interim by electrically driven pumps, it is estimated that there will be a reduction in the operation and maintenance charge by elimination of the energy component which will leave an estimated $1.46 per acre annually to apply on construction costs.

Repayment costs per acre:	
Federal investment per acre	$337.00
Water users	0
From power revenue	337.00
Annual water user charges:	
Construction	0
Operation and maintenance	5.00
Total	5.00
Increased net income per acre resulting from project irrigation (payment capacity)	8.00

OPERATION

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres), full				5,020
Total				5,020

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$1,711,523
Total obligations to June 30, 1952	152,635
Allotment, fiscal year 1953	400,000
Prior year balance available	433,888
Total obligations, fiscal year 1953	833,888
Allotment, fiscal year 1954	673,000
Total obligations, fiscal year 1954	673,000
Balance to complete	52,000

JUSTIFICATION OF ESTIMATE

Location

The Crow Creek pump unit is located south of Crow Creek near its confluence with the Missouri River and the town of Toston, in southwestern Montana.

Description

Water will be pumped from the Missouri River with a lift of 175 feet to irrigate 5,020 acres of new land. The pumping plant on the Missouri River will discharge into a tunnel to be constructed through a ridge separating the river from the Crow Creek area. The tunnel will discharge into the Toston and Lombard Canals.

Status

Preconstruction surveys and studies began in fiscal year 1949. As of June 30, 1953, repayment consideration will have been further investigated as directed by the Congress, and a report on the studies of repayment will have been made to the Congress. Equipment for the pumping plant will have been ordered for installation by contract in fiscal year 1954. Construction of the access road and tunnel will be almost completed. Design data will have been completed for the tunnel, canals, laterals and drains early in the year, and construction will be under way at the close of the year. Revisions to volume I of the definite plan report will have been completed.

Work proposed, fiscal year 1954

Construction of the pumping plant, tunnel, canals, laterals, and drains will continue throughout the year. Construction is to be complete, except for future drains, at the close of the fiscal year and initial water will be available for irriga-

tion of the land. It is anticipated that the first block to be irrigated will be about 2,500 acres.

Justification

The people of Broadwater County have insisted that facilities be provided for irrigation in Broadwater County to provide irrigated land equal in acrage to that which would be inundated by Canyon Ferry Reservoir above elevation 3,766. Recognizing the position of Broadwater County, restrictions have been carried in the fiscal year appropriation bills of 1949 and 1950 and were discussed in hearings on the fiscal year 1953 bill. Although more than one-half of the landowners were in favor during an early survey, difficulties were encountered in forming an irrigation district because of large holdings and a desire on the part of some of the large landowners to continue dryland farming. These problems were presented to the Congress in the hearings by the Bureau. As a result the Senate Committe on Appropriations directed that the Bureau proceed with construction of the unit and to report to the congressional committees, during hearings on the fiscal year 1954 appropriation bill, on the status of negotiations for a repayment contract for the unit.

The Crow Creek pump unit is the most desirable unit which could provide irrigated land in Broadwater County equal in acreage to the irrigated land which would be inundated. The program as outlined for fiscal year 1954 must go ahead if water is to be made available in May of 1954, the first irrigation season following the generation of power at Canyon Ferry powerplant which is scheduled for the fall of 1953.

The estimated cost of the unit has increased from $1,525,000 to $1,693,000 (anticipated obligations $1,711,523) due to increased construction costs, as reflected by actual bid prices, and inclusion in the estimate of additional facilities required for future operation and maintenance of the unit.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Crow Creek pumping plant	$615,000	$70,546	$279,377	$265,077	
Toston tunnel	430,000	54,443	364,220	11,337	
Toston Canal	150,000	6,527	57,202	86,271	
Lombard Canal	114,000		46,000	68,000	
Lateral system	136,000		40,000	96,000	
Drainage system	161,000		23,441	87,559	$50,000
Farm unit development	13,000		4,000	6,000	3,000
Distribution lines	16,000	561	6,200	9,239	
General property	58,000		4,000	54,000	
Total cost	1,693,000	132,077	824,440	683,483	53,000
Construction facilities			7,000	−6,000	−1,000
Stores			2,700	−1,985	−715
Project investigations			2,498	−2,498	
Transfers, credits, and other expenditures	18,523	20,438	−2,630		715
Total expenditures	1,711,523	152,515	834,008	673,000	52,000
Unliquidated obligations		120	−120		
Total obligations	1,711,523	152,635	833,888	673,000	52,000
Method of financing:					
Allotment, fiscal year 1953			400,000		
Prior year balance available			433,888		
Allotments required				673,000	52,000

Mr. JENSEN. Last year the Senate committee directed that the construction proceed, but that the Bureau should report this year on the status of repayment contract negotiations.

Will you tell us what has been done regarding that?

Mr. LINEWEAVER. Yes, sir. I have a statement on the Crow Creek construction and also on the status of the repayment negotiations

which have not been consummated as yet, but we believe that the situation is clarifying, due to the lack of rainfall in the area. We have hopes that through the efforts of local people, and others, that a sponsoring committee, headed by State Senator Bristow, will bring results in the near future.

I have a complete statement on the matter, in response to the Senate committee's directive.

Mr. JENSEN. We will receive it for the record, without objection.

(The matter referred to is as follows:)

CROW CREEK PUMP UNIT, MONTANA

The Crow Creek pump unit is located in southwestern Montana, approximately 47 miles southeast of Helena.

This single purpose irrigation project will replace on the tax list of Broadwater County an area equal in size to the area of agricultural land that will be inundated when Canyon Ferry Reservoir is filled. The Congress instructed the Bureau of Reclamation to build the Unit in order that the reservoir may be filled to capacity. The Bureau was also instructed to report to the Congress the status of repayment arrangements during the construction period. A special report has accordingly been prepared and has been, or will be, submitted to this committee.

An appropriation of $6,075 is requested for operation and maintenance of the Crow Creek pump unit during fiscal year 1954.

Crow Creek pump unit is a portion of the originally proposed Crow Creek unit as presented in the comprehensive development program for the Missouri River Basin project described in Senate Document 191. When construction of the Canyon Ferry unit, Montana, was undertaken restrictions in the fiscal year 1949 and 1950 Appropriation Acts required new lands be provided in Broadwater County, Mont., with irrigation facilities equal in acreage to the irrigated land inundated by the Canyon Ferry Reservoir. This prompted the selection of the present plan for development of Crow Creek pump unit by which the 5,020 acres will be served by pumping from the Missouri River.

Preconstruction surveys and studies began in fiscal year 1949 and by June 30, 1953, a report on the studies of repayment will have been made to the Congress as directed. A contract for Toston Tunnel and access road has been awarded and construction will be nearing completion by the end of fiscal year 1953. Equipment for the pumping plant has also been ordered to be ready for installation by contract in fiscal year 1954. During the remainder of fiscal year 1953 contracts will be awarded for the construction of Crow Creek pumping plant, Toston and Lombard Canals, and drains.

Funds requested for activities in fiscal year 1954 are needed to cover continuation and completion of construction on the pumping plant, canals, laterals, and drains, Toston Tunnel and access road. Construction is scheduled to be completed, except for future drains, by June 30, 1954. This program will provide irrigation water for about 2,500 acres in 1954, the first irrigation season following the generation of power at Canyon Ferry power plant.

SPECIAL REPORT TO CONGRESSIONAL APPROPRIATION COMMITTEES, CROW CREEK PUMP UNIT, MONTANA, MISSOURI RIVER BASIN PROJECT

In connection with instructions to the Bureau of Reclamation in last year's appropriations hearings, I am pleased to present a report of the regional director, Billings, Mont., on the repayment contract situation of the Crow Creek unit, Missouri River Basin project.

INTRODUCTION

The Crow Creek pump unit was investigated and proposed for development solely to meet the requirements of the restriction contained in the 1949 and 1950 Interior Department Appropriation Acts. The restrictive language in effect provided that no part of the 1949 and 1950 Canyon Ferry appropriations should be used to maintain or operate the reservoir at an elevation in excess of 3,766 until an acreage of new land in Broadwater County, Mont., be provided with irrigation facilities to replace the land inundated by Canyon Ferry when operated at elevations greater than 3,766 feet.

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The Appropriation Acts for fiscal years 1951 and 1952 did not carry such a provision, nor were the previous restrictions referred to or mentioned. However, the Bureau of Reclamation felt committed to the local people and others to bring a new acreage of land under irrigation.

Funds in the amount of $140,000 were appropriated in fiscal year 1952 for starting construction of the Crow Creek pump unit. However, these funds were not used because of the inability to secure a satisfactory repayment arrangement with the prospective water users.

After full disclosure of these developments the Interior Department Appropriation Act, 1953, made available the additional sum of $500,000 to the Bureau of Reclamation for construction of the unit. In its report the Senate Appropriations Committee recommended that the Bureau of Reclamation proceed with the construction of the unit and continue to seek the organization of an irrigation district with which a repayment contract could be negotiated. In the event a contract could not be agreed upon before the delivery of water, as required by reclamation law, the Bureau was directed to report to the committee the following year and seek further instructions.

A determined effort has been made to encourage the organization of an irrigation district and to negotiate a repayment contract with the landowners during the past year without success. Consequently, a review of circumstances and events leading to the proposal for this unit together with recommendations is presented, and further instructions are requested.

BASIS FOR RESTRICTIONS TO CANYON FERRY APPROPRIATION, FISCAL YEARS 1949 AND 1950

The operation of Canyon Ferry Reservoir, now under construction, at the outium elevation of 3,800 feet will inundate some 6,000 acres of land now irrigated by diversion from the Missouri River. Of this area, about 4,400 acres lie above elevation 3,766.

The irrigated land in the reservoir area now makes important contributions to the business activity of Townsend, Mont., and other nearby communities and to the public institutions in Broadwater County. While the ultimate area proposed for irrigation development in the vicinity greatly exceeds the irrigated area to be inundated, it is understandable that business and public institutions desire some assurance that facilities for irrigation of a substitute acreage will be available at approximately the same time that the current irrigable acreage is reduced by inundation. This point of view is forcefully presented in a statement by a citizen of Townsend, Mont., before the Subcommittee on Interior Department Appropriations, House of Representatives, 80th Congress, 2d session, and reported on pages 2150–2161 of the hearings on the Interior appropriation bill for 1949.

As a result of the above testimony and the attendant circumstances the appropriation bills for fiscal years 1949 and 1950 with respect to the Canyon Ferry unit specified:

"* * * that no part of this appropriation shall be available or used to maintain or operate Canyon Ferry Reservoir at a higher maximum normal pool elevation than 3,766 feet, unless and until new land in Broadwater County, Mont., equal in acreage to the irrigated land to be inundated in Canyon Ferry Reservoir above elevation of 3,766 feet is provided with facilities for irrigation, or for or in connection with the acquisition or installaton of the power facilities or transmission facilities for delivering power from the Canyon Ferry project, Montana."

EFFECT OF LOW-LEVEL CANYON FERRY OPERATION AND POWER REVENUES

The gross annual power revenues expected from the Canyon Ferry unit with normal elevation of 3,800 feet will be $1,211,000, as compared with $804,100 if the reservoir elevation is restricted to 3,766 feet.

Since the loss in annual power revenues resulting from operation of the reservoir of the lower elevation would in a very few years amount to more than the cost of providing irrigation facilities for an acreage of land equal to that flooded by the reservoir, investigations were started to replace the irrigable land to be inundated. Small pumping developments on both sides of the Missouri River were investigated, and the most feasible plan was for the development of the Crow Creek pump unit.

DESCRIPTION OF THE UNIT

The Crow Creek pump unit is located in south central Broadwater County in Montana. It consists of 4,800 acres of irrigable land bordering U. S. Highway No. 10 North. The original Crow Creek unit, described in Senate Document 191, 78th Congress, 2d session, contains 23,400 acres and includes the land to be served by the Crow Creek pump unit.

Water will be lifted an average of 176 feet from the west bank of the Missouri River south of Toston. Water will be pumped through a 1,175-foot discharge pipe and will continue by gravity through the 2,044-foot Toston Tunnel. Two canals, the Toston and Lombard, with six laterals will carry the water to 34 proposed farm units.

Field surveys and detailed land classification for the unit were completed in June 1949.

Preconstruction surveys began in July of 1952. Invitations for bids on pumps were circulated and award made in July. The contract for access road and tunnel construction was awarded and work commenced in September 1952. Award of contracts for the distribution system will be made in April 1953. The initial delivery of water is scheduled for May of 1954.

EFFORTS TO OBTAIN REPAYMENT CONTRACT WITH IRRIGATION DISTRICT

During the investigational period landowners were informed of the purpose of the Bureau's activity. The landowners had not requested the Bureau to investigate their lands for future irrigation, but they offered no objections to the investigations and refrained from expressing a definite attitude toward the proposed development until the Bureau had a plan to offer.

Each landowner was visited individually during April 1951, and following interviews were made with several individuals. The entire plan of development was explained, and many landowners' questions were answered. The landowners were reluctant to express their attitude toward the proposal until they had an opportunity to meet as a group.

A meeting was held in Toston to review the proposed plan with the landowners. All but one landowner attended. The group appointed a committee consisting of three landowners to make an attitude survey for the purpose of determining the possibility of organizing an irrigation district. This committee submitted a report to the Bureau (appendix A) which pointed out that the Bureau's present proposal was not acceptable to the landowners and no attempt would be made to organize an irrigation district at that time.

As all landowner contacts made during fiscal year 1951 indicated disinterest in the Bureau's regular requirements with respect to organization and repayment contract to date, an alternate plan has been proposed. In brief, this plan is to negotiate individual water service contracts with the landowners, extending for a period of 5 years. After development of a considerable portion of the unit under individual water service contracts, it is anticipated that no difficulty will be encountered in organizing an irrigation district in the usual fashion.

In accordance with the recommendation contained in the report of the 1953 Senate Appropriations Committee, the Bureau of Reclamation proceeded with the construction of the unit, and efforts were continued to organize an irrigation district.

The landowners of the unit were visited on several occasions during July 1952. Permission for preconstruction surveys to be carried out on the privately owned land was received from all of the landowners except one, who felt that granting this request might indicate that he was favorable to the development. Six of the larger landowners were reapproached in regard to their willingness to form an irrigation district, and all of them reaffirmed their position of the year previous. The landowners were shown the topographic farm unit subdivision of the area, and in general they approved the layouts with some minor changes recommended. One owner didn't plan to irrigate and refused to sell his holdings in any manner other than as one tract.

On August 7, 1952, a general meeting was held in Townsend, attended by the landowners, representatives of the chamber of commerce, and others. A complete and thorough presentation of information relative to circumstances leading to the Crow Creek pump unit development was made by Reclamation officials.

It was emphasized that the Crow Creek pump unit was proposed as a result of the insistence of Townsend people to replace the irrigated land to be flooded by Canyon Ferry between elevations 3,766 and 3,800. Following the meeting,

State Senator W. F. Bristow volunteered his assistance to serve on a sponsoring committee to promote the formation of an irrigation district and to meet landowners in this regard. Senator Bristow believes that the irrigation facilities of the unit will be used once they are completed.

During October 1952 Bureau personnel presented a plan to some of the landowners and members of the committee for sponsorship of an irrigation district, whereby the large landholders could dispose of their excess holdings in an orderly manner. The plan was essentially that of having each owner develop one or two farm units each year and lease the unit to an operator who might also be a prospective purchaser. If the tenant appeared to be a good risk, the land could be sold on a contract-for-deed basis. By selling in this method, income-tax payments would be reduced, and settlers would be assisted in getting established. If the land were leased for several years, the landlord's share would more than pay for the farm unit development work. Farm budgets showing the landlord's share were prepared for presentation to the landowners. Those who saw the budgets agreed that the returns to the landlord were satisfactory and that the figures appeared reasonable.

During December 1952 various citizens of Broadwater County who had shown interest in the Crow Creek pump unit in the past and who had volunteered to promote the formation of an irrigation district were visited. They advised that the people of the county as a whole were of divided opinions concerning the unit development; consequently, so as not to offend some, only a casual effort was made to support the formation of an irrigation district. It now appears that some farmers west of Warm Springs Creek and the unit are interested in a supplemental water supply. A supplemental water supply could be furnished this area from facilities of the Crow Creek pump unit as planned with some additional features if some of the acreage of the unit were bypassed.

Generally speaking, Townsend people are of the opinion that water, when provided for the unit, would be used. However, on account of prevailing landowner attitudes, they are reluctant to take the initiative in promoting a district organization.

On January 17, 1953, a general meeting attended by landowners in the unit, residents of Townsend, Mont., and ranchers west of Warm Springs Creek was held at Toston, Mont., near the unit. Reclamation representatives attending the meeting briefly reviewed the proposals for development of the unit and asked the landowners if they were now willing to consider district formation. This question was answered in the negative. The question was then raised, under what conditions would they be willing to utilize water from the unit? After indicating conditions under which water might be utilized, the landowners prepared a statement, copy attached (appendix B), in which they point out that they do not intend to form an irrigation district but would buy water under an individual water sales contract for a portion of their lands. Five of the landowners in the unit signed the statement. Four of the landowners who were not present at the meeting probably would have signed the statement. Of the remaining 2 landowners, 1 of the partners representing the largest land ownership amounting to about 38 percent of the irrigable acreage of the unit did not sign the prepared statement and made it clear that he didn't intend to sign for use of the water in the year in which it is initially available.

Five landowners from west of Warm Springs Creek were present at the January 17 meeting and expressed an interest in obtaining a supplemental water supply from several acres of land in that vicinity. In order to serve this acreage and the acreage planned under the unit, it would be necessary to extend the facilities at some additional expense.

LANDOWNERS' REASONS FOR NOT ACCEPTING CURRENT PAYMENT ARRANGEMENTS

Present owners not potential water users

The owners of the major portion of the land in this unit are not greatly interested in irrigation because of their age or because of other farm activities. In principle they favor irrigation but do not wish to obligate their land with a 40-year repayment contract or be subject to regulatory measures such as the anti-speculation and excess land provisions in reclamation contracts.

Opposition to irrigation district formation

It has been Department policy that the landowners form an irrigation district before construction is begun. The present landowners prefer that the potential water users assume this responsibility and have requested that the formation of

an irrigation district be postponed. As stockmen and wheat farmers with large holdings, they do not wish to assume the responsibility of irrigated farms but prefer to sell their irrigable land. They feel that if district organization is delayed, a contract can be agreed upon that will be equitable to both the new landowner and the Government.

Problems of land exchange

The landowner objects to any attempt to control his selling price, limit the acreage irrigated, with no assistance available in disposing of excess land. Under a land purchase or credit program, the landowners would have less complaint than with the present system under which the landowner feels that he assumes all the risk including liability for repayment of construction charges.

Other irrigation development less restrictive

The Montana State Water Conservation Board has several irrigation developments in the area and did not demand a rigid repayment contract before construction. The facilities were constructed, and the landowners contracted for the water at their convenience. In a very few years the facilities were fully utilized.

Limitation on size of farm unit

Many of the present landowners feel that 160 irrigable acres of this unit would not comprise an economic unit.

RECOMMENDATIONS AND CONCLUSIONS

Because of the inability of the landowners of the unit favorable to irrigation to organize an irrigation district for entering into a repayment contract with the United States and the apparent willingness of some of them to use water on an individual water service contract basis, consideration should be given the latter means of developing the irrigable lands.

Therefore, it is proposed that individual water service contracts with the water users be used until full irrigation development of the unit has been accomplished. The water service contract should provide for minimum acreages to be irrigated in the first year, such minimums to be gradually increased until at least one-half of the irrigable acreage would be irrigated by the fifth year. Provision should be made for varying the water charge by class of land. After sufficient time has elapsed for full development of the unit, an irrigation district will be organized and negotiations will be undertaken to obtain a contract for repayment of the cost of the irrigation distribution system and for operation of the project facilities by the water users.

In the interest of efficient operation of the reservoir and powerplant and in the light of the representation of local interests directly affected, the Bureau will utilize water service contracts with individual landowners on the Crow Creek pump unit, under provisions satisfactory to the Secretary of the Interior, to be executed during the period that the canals, laterals, pumping plant and other facilities are under construction.

APPENDIX A

REPORT OF CROW CREEK LANDOWNERS

MAY 4, 1951.

We the undersigned landowners, a committee appointed by the landowners in the Crow Creek area under consideration for irrgation development by the United States Bureau of Reclamation find at this time it is not posible to form an irrigation district. We set forth the following reasons:

1. The owners of land representing largest blocks affected would have their fall range split in two and would not have dependable stock water. They believed the Government or some individual or organization should purchase this land and subdivide it in the manner acceptable to the Bureau of Reclamation thus relieving them of the responsibility.

2. One owner in the center of the proposed development stated he was too old to irrigate and didn't desire to sell out.

3. One onwer stated the cost after the development period would be too high under normal prices of farm products.

4. The balance were in favor of development or more or less on the fence stating they would go along if the rest of the owners wanted it.

5. The owners objecting represented more than 40 percent of the land to be affected so we see no prospects of a district being formed until their objections are overcome.

CHESTER NELSON.
ELZARUS L. HUNSAKER.
LESLIE SMITH.

APPENDIX B

TOSTON, MONT., *January 17, 1953.*

We, the landowners of land in the Crow Creek Pump Unit in Broadwater County, Mont., reaffirm our report of May 4, 1951, in that we do not intend to form an irrigation district under the laws of the State of Montana. We would be interested in using water on a portion of our land on an acre-foot basis at a reasonable rate. We recommend the Bureau of Reclamation submit an individual water service contract for our consideration. It is understood that those lands under the canal that do not want water will be bypassed, and no obligation will be assumed by those landowners.

ELZARUS L. HUNSAKER.
DAN JEX HUNSAKER.
WILLIS HOSSFELD.
DON L. MILLER.
ROBT. BARRINGER.

FRENCHMAN-CAMBRIDGE DIVISION, NEBRASKA

Mr. JENSEN. The next item is the Frenchman-Cambridge Division in Nebraska.

We will insert in the record, without objection, the special data which the committee requested of the Bureau at this point on pages 508–513 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION AND OPERATIONS AND MAINTENANCE

Construction

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$38,801,083	$7,804,643	$4,875,000
Unliquidated obligations	4,164,818	−3,665,818	
Total obligations	42,965,901	4,138,825	4,875,000

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures		$102,732	$144,712
Unliquidated obligations			
Total obligations		102,732	144,712
Less: Funds advanced by water users			
Appropriation or estimate		[1] 102,732	144,712

[1] Appropriated under Construction and Rehabilitation for Missouri River Basin, phase E, but shown in United States Budget, 1954, as a comparative transfer to "Operation and maintenance."

HISTORY OF PROJECT DEVELOPMENT

Location

Southwest Nebraska in Hitchcock, Red Willow, Furnas, and Harlan Counties. Principal city in the project area is McCook, Nebr.

Purpose

Irrigation and flood control.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887) and subsequent acts in accordance with a plan of development set forth in S. Doc. 191 and H. Doc. 475, as revised and coordinated by S. Doc. 247, 78th Congress, 2d session.

Initial date:

Planning, 1939.
Advanced planning, 1946.
Construction, 1947.
Date of functional completion of construction—fiscal year 1958 except for the Red Willow and McCook canals and laterals and the Holbrook laterals which are indefinitely deferred.

Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1947	$1,643,000

COSTS

Original estimated cost	$26,894,500
Allocation of cost unallocated	26,894,500
Present estimated cost	71,748,000
Allocation of cost:	
Irrigation	53,871,000
Flood control	17,382,000
Fish and wildlife	94,000
Recreation	401,000

REPAYMENT

Status of repayment contract negotiations: Water service and repayment contract has been executed with Frenchman-Cambridge Irrigation District. Ultimately, other contracts wil lbe required for the area within the Frenchman Valley Irrigation District.

Amount to be repaid and repayment period

The distribution system obligation of the Frenchman-Cambridge District is $2,328,800. This obligation is repayable in 40 years after completion of construction and the close of a 5-year development period. Additional costs will be returned by the district through the construction component in the water service charge and through payments to be made under contracts to be executed for the Frenchman Valley area.

Repayment of costs allocated to irrigation

Water users	$9,325,520
Missouri River Basin project pooled power revenues	44,545,480
Total	53,871,000

Repayment costs per acre

Federal investment per acre	$786
Water users	136
From power revenue	650
Annual water user charges per acre:	
Construction	[1] 1.60
Operation and maintenance	3.80
Total	5.40
Increased net income per acre resulting from project irrigation (payment capacity)	7.20

[1] This rate of payment will necessitate water-service contracts with equivalent construction component for about 45 years following initial 40-year payment period to return full cost payable by irrigation.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full		10,000	22,660	55,020
Supplemental				13,550
Total		10,000	22,660	68,570

Personnel

Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954: Included in consolidated statement for Missouri River Basin project, operation and maintenance.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$71,843,225
Total obligations to June 30, 1952	42,965,901
Allotment, fiscal year 1953	1,143,000
Prior year balance available	2,995,825
Total obligations, fiscal year 1953	4,138,825
Allotment, fiscal year 1954	4,875,000
Total obligations, fiscal year 1954	4,875,000
Balance to complete	19,863,499

JUSTIFICATION OF ESTIMATE

Location

The division is located in southwest Nebraska in Hitchcock, Red Willow, Furnas, and Harlan Counties. Project lands extend from Palisade, Nebr., southeastward along Frenchman Creek and from Trenton, Nebr., eastward along the Republican River to Orleans, Nebr. Principal city in the project area is McCook, Nebr.

Description

The major functions to be performed by the unit are irrigation and flood control. Water will be impounded by four dams. Trenton Dam on the Republican River, Enders Dam on Frenchman Creek, Medicine Creek Dam on Medicine Creek, and Red Willow Dam (USCE) on Red Willow Creek. Enders and Medicine Creek Dams are complete and Trenton Dam is under construction. Combined capacity of the reservoirs is 472,000 acre-feet. Water will be delivered to a service area of 68,570 acres by a system of approximately 245 miles of canals. Trenton Dam will discharge water directly into a part of the canal system; the balance of the stored water, along with natural flow, will be diverted into the system of canals by 2 diversion dams on the Republican River and 1 each on Frenchman and Red Willow Creeks.

Repayment

The Frenchman-Cambridge Irrigation District, covering lands in the Cambridge and Red Willow units, and part of the Meeker-Driftwood and Frenchman units, has been formed and a repayment contract has been negotiated. It is a combination water-service and repayment contract. The repayment obligation for construction charges for the distribution system is not to exceed $2,328,800. The irrigable lands not now included under the existing contract are partly in the existing Frenchman Valley Irrigation District and partly outside the boundaries of any existing district. These lands will be organized under new districts or extensions of present district boundaries, and repayment contracts negotiated. Construction of the laterals to serve these lands is programed subsequent to the anticipated date of execution of additional repayment contract or contracts.

Status

Construction was initiated on the Frenchman-Cambridge division with start of work on Enders Dam in March 1947. Enders Dam, Medicine Creek Dam, and the Cambridge diversion dam are complete and in service. As of June 30, 1953, the entire division will be approximately 65 percent complete. Trenton Dam and Swanson Lake representing nearly a third of the total cost of the division, will be nearing completion. The first 30 miles of the Cambridge Canal, together with laterals, will be completed, and construction will have been initiated on the remaining portion of the Cambridge system. Construction will also be under way on the Bartley diversion dam, canal, and laterals. Design will be advanced on Upper Meeker Canal, Driftwood Canal, and initial portion of Culbertson Canal.

Work proposed fiscal year 1954

The 1954 program calls for completion of Trenton Dam and Swanson Lake; completion of entire system of Cambridge Canal and laterals; completion of Bartley diversion dam, canal, and laterals. Completion of these facilities will bring 22,660 acres of the division under irrigation. Assembly of design data and preparation of final design on remaining irrigation features will be advanced.

Justification

Enders and Medicine Creek Reservoirs are presently storing irrigation water. Trenton Dam will be impounding water during fiscal year 1953. This water can be put to its designed use on project lands only upon completion of the division's canals and laterals. Any delay in the program proposed will retard the achievement of the irrigated acreage with resultant loss of potential food productively needed for national security.

Completion of the Frenchman-Cambridge division construction will not require an undue amount of critical materials. Completion of the impounding facilities is important to flood control on the Republican River and the ultimate elimination of its flood potential contribution to the Kansas River which caused a devastating flood during the summer of 1951 from the confluence of the Republican River through Junction City, Manhattan, Topeka, Lawrence, and Kansas City to the confluence of the Kansas River. Completion of the division irrigation facilities are also important to the advantage of excellent soil and a relatively long growing season. Irrigation will create a highly flexible agriculture capable of producing a wide variety of protective foods such as tomatoes, leafy vegetables, meat, poultry products, and dairy products, together with such important defense crops as castor beans for oil production, soybeans, and safflower, as may be required to meet changing requirements during national emergencies.

The total estimated cost of the project has increased from $66,577,000 to $71,784,000 (anticipated total obligations, $71,843,225). The increase in cost is due mostly to increases in prices as a result of the general cost rise as applicable to incomplete and proposed work. Considerable cost increase at Trenton Dam has been brought about by delayed delivery of steel.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Enders Dam and Reservoir	$8,374,000	$8,358,848	$72,152		−$57,000
Medicine Creek Dam and Reservoir	6,888,000	6,920,418			−32,418
Trenton Dam and Reservoir	22,930,000	15,729,995	5,757,401	$1,442,604	
Cambridge diversion dam	550,000	533,462	16,538		
Temporary Meeker diversion dam	60,000	58,810	1,190		
Red Willow Creek diversion dam	475,000	8,333			466,667
Bartley diversion dam	457,000	28,201	176,000	252,799	
Cambridge diversion dam extension	339,000	6,261			332,739
Culbertson diversion dam (rehabilitation)	62,000	1,046			60,954
Cambridge Canal	6,040,000	3,819,074	811,715	1,409,211	
Holbrook Canal	534,000	10,399			523,601
Bartley Canal	1,997,000	75,176	565,000	1,356,824	
Red Willow Canal	1,569,000	24,978			1,544,022
McCook Canal	117,000	2,046			114,954
Upper Meeker Canal	1,610,000	72,054	40,000	50,000	1,447,946
Driftwood Canal	3,178,000	177,868	30,000	35,000	2,935,132
Meeker Canal extension	881,000	20,005	20,000	20,000	820,995
Existing Meeker Canal (rehabilitation)	186,000	153,631	369		32,000
Culbertson Canal	3,153,000	123,002	20,000	45,000	2,964,998
Culbertson Canal extension	3,234,000	117,526	24,000	15,000	3,077,474
Beverly-Riverside Canal	440,000	28,877	20,000	25,000	366,123
Farmers Canal	47,000	1,031			45,969
Cambridge laterals	1,046,000	204,760	601,000	240,240	
Holbrook laterals	21,000	1,015			19,985
Bartley laterals	256,000	19,432	100,000	136,568	
Red Willow laterals	271,000	4,159			266,841
McCook laterals	32,000	1,020			30,980
Meeker-Driftwood unit laterals	1,066,000	22,326	20,000	20,000	1,003,674
Culbertson laterals	753,000	12,505			740,495
Culbertson extension laterals	555,000	9,405	10,000	20,000	515,595
Beverly-Riverside laterals	149,000	3,794	8,000	6,754	130,452
Farmers laterals	28,000	1,015			26,985
Cambridge unit drains	895,000	14,568			880,432
Red Willow unit drains	584,000	10,399			573,601
Meeker-Driftwood unit drains	717,000	12,497			704,503
Frenchman unit drains	1,077,000	17,697			1,059,303
Farm-unit development	73,000	14,203	4,000	6,000	48,797
Frenchman-Cambridge general-service equipment	283,000	87,301	59,000	34,000	102,699
Enders recreation development	120,000	73,434			46,566
Medicine Creek recreation development	160,000	59,094			100,906
Trenton recreation development	215,000	2,531	15,000	10,000	187,469
Kansas River district permanent headquarters	326,000		326,000		
Total cost	71,748,000	36,842,196	8,697,365	5,125,000	21,083,439
Construction facilities		865,427	−167,000	−200,000	−498,427
Stores		911,463	−676,950	−50,000	−184,513
Project investigations			38,000		−38,000
Operation and maintenance during construction	95,225	95,225			
Transfers, credits, and other expenditures		86,772	−86,772		
Total expenditures	71,843,225	38,801,083	7,804,643	4,875,000	20,362,499
Unliquidated obligations		4,164,818	−3,665,818		−499,000
Total obligations	71,843,225	42,965,901	4,138,825	4,875,000	19,863,499
Method of financing:					
Allotment, fiscal year 1953			1,143,000		
Prior-year balance available			2,995,825		
Allotments required				4,875,000	19,864,000

Mr. JENSEN. You are asking for $4,875,000 for fiscal 1954 and you also have a request for operation and maintenance in the amount of $144,712.

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. Do you care to make a statement on that?

Mr. MARKWELL. I have a prepared statement which I would like to submit for the record.

Mr. JENSEN. Without objection, it will be inserted at this point.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

The Frenchman-Cambridge project is designed to provide new and supplemental irrigation water to 68,570 acres in Nebraska. The project consists of 4 storage dams, one of which is to be constructed by the Corps of Engineer, 6 diversion dams, canals, laterals, drains and other facilities. Enders and Medicine Creek storage and Cambridge and Meeker diversion dams have been completed. During fiscal year 1953 work will be under way on Trenton Dam, Bartley diversion dam, Cambridge and Bartley canals and laterals. Appreciable flood control benefits by construction of the storage dams of the division will be realized by the end of fiscal year 1953.

Funds requested for fiscal year 1954 will be used for continuation of construction of features which are already under construction at the beginning of the year and which will be completed during the year. These include Trenton Dam and Swanson Lake Cambridge Canal and laterals, Bartley diversion dam, canal and laterals. Completion of this work will bring a total of 22,660 acres of desirable lands under irrigation which will strengthen the local and national economy and make it possible to realize benefits from the substantial investment made by the Government to date. Assemblage of data and preparation of designs will be continued for remaining features of the project.

OPERATION AND MAINTENANCE

The Frenchman-Cambridge division is located along the Republican River in southern Nebraska. One storage dam of the project is located at Enders, Nebraska, on Frenchman Creek, and another on Medicine Creek 8 miles upstream from Cambridge, Nebr. A third storage dam, Trenton Dam, is being constructed on the Republican River 2½ miles upstream from Trenton, Nebr. The Meeker diversion dam is located on the Republican River near Culberton, Nebr., and the Meeker Canal extends from that point on the south side of the river to near McCook, Nebr. The Cambridge diversion dam is located on the Republican River near Cambridge, Nebr., and the Cambrdige Canal extends from there to a point near Oxford, Nebr.

The division is a multiple-purpose project involving irrigation, flood control, and other benefits. Ultimate development will irrigate 68,570 acres, of which approximately 12,000 acres will receive a supplemental water supply.

The Frenchman-Cambridge Irrigation District was formed in April 1946 and has negotiated a repayment contract with the Government for the reimbursable construction cost for 40,000 acres of land. The additional land will have to be covered by other irrigation districts and contracts. In 1947, water users under the Meeker Canal petitioned the Bureau of Reclamation to rehabilitate their canal and provide satisfactory water service on a temporary basis until newly constructed features in the Frenchman-Cambridge Irrigation District could serve their lands. The ditch was acquired by the Government and previous to fiscal year 1953 it had been operated with funds appropriated for operation and maintenance during construction. The system has been rehabilitated on a temporary basis and will provide satisfactory delivery to 3,200 acres in fiscal year 1954. Storage water in Enders Reservoir is now available for diversion. Previously the system was dependent on stream flow.

A total appropriation of $144,712 is requested for operation and maintenance of the Frenchman-Cambridge Division during fiscal year 1954. Of this total, $116,598 will be reimbursable, providing for the operation and maintenance of all irrigation features of the project. The balance will be nonreimbursable and apportioned as follows: flood control $26,832; recreation $641; fish and wildlife $641.

Mr. LINEWEAVER. Mr. Chairman, we have had a rather disconcerting problem to come before us with respect to the increased cost of Bartley diversion dam on the Republican River, which is set up in this budget presentation at a total cost of $457,000. The program for

fiscal year 1954 is $252,799. It has been redesigned and the present estimated cost under the redesign is something over $1 million for the dam, supporting contracts and indirect costs. I regret to advise the committee that while our field offices have known for more than a year that the cost of this structure would be considerably more than the amount provided for it in the budget, they failed to notify the Commissioner unil quite recently or to amend the budget. However, we have just received bids for the Bartley diversion dam and I am able to report to the committee that the engineer's estimate of the cost of the dam alone was $743,000 and the low bid is $593,459, or $150,000 under the engineer's estimate. The redesign was necessary to insure a stable structure that will withstand the erratic stream flows typical of the Republican River Valley and provide continuous service to the water users.

We have felt that we should make this statement to the committee in the light of the fact that the figures shown on page 512 of the justification are entirely different from what the facts are today. We are working under a repayment contract to provide irrigation facilities for this area and the cost, above the ability of the water users to repay, as set forth in the contract, will come from the overall Missouri Basin power revenues.

Mr. JENSEN. According to that statement what should the figure be as to the amount you are asking for in 1954?

Mr. LINEWEAVER. The total estimated cost of the dam, according to the present estimate, before this bid came in, was $1,196,000, but that includes 1953 expenditures, the supporting contracts, and indirect costs. I am not in a position at this time to say exactly what the 1954 cost alone will be, but we will have the figures inserted as to just what will be required for fiscal 1954. As explained in the statement that follows, $840,000 will be required for this feature in fiscal year 1954.

Mr. JENSEN. And, then, you will notify the secretary of the committee?

Mr. LINEWEAVER. Yes, sir.

(The following submitted subsequently for insertion at this point.)

MISSOURI RIVER BASIN PROJECT, FRENCHMAN-CAMBRIDGE DIVISION

BARTLEY DIVERSION DAM

The Bartley diversion dam, which is to serve a subunit of about 7,000 acres in the Red Willow area, appears in the budget program as being placed under construction in fiscal year 1953 at a total estimated cost of $457,000, and being completed in fiscal year 1954. The fiscal year 1953 program is shown as $176,000 and fiscal year 1954 as $252,709.

Following more detailed investigations and model studies of the proposed dam, it has been determined that radical increases in design are essential in order to reduce siltation in the canal and to afford a safe structure. These design revisions involve increasing the weir section from 392 feet to about 700 feet; increasing the cross section; extending the apron; and increasing the quantities of riprap and steel piling required. These changes have increased the total estimated cost to $1,196,000. Design studies resulting in this increase were not completed in time for incorporation in the fiscal year 1954 budget submission.

The increased cost of Bartley diversion dam is offset by substantial reductions actually realized in the construction of the Trenton dam of the same division. Consequently there has been no increase in the overall cost of the Frenchman-Cambridge Division as shown in the budget estimate. It is proposed, subject to departmental approval, to use funds now programed for the Trenton dam, and not required for that structure, to meet the increased requirements on the Bartley diversion dam. As both structures are within the same division of the project, no actual transfer of funds is required.

The revised fund requirement for the division in fiscal year 1954 is $4,334,000 or a reduction of $541,000. It is possible that further savings may be realized as a result of opening bids on Bartley dam. The low bid is approximately $150,000 below the estimate.

JAMESTOWN UNIT, NORTH DAKOTA

Mr. JENSEN. The next item we have for consideration is the Jamestown unit in North Dakota.

We will insert in the record at this point the special data sheets on this project and pages 516 through 519 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION

Missouri River Basin project, Jamestown unit, North Dakota

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$694,781	$2,446,965	$1,657,000
Unliquidated obligations	200,048	−200,048	
Total obligations	894,829	2,246,917	1,657,000

HISTORY OF PROJECT DEVELOPMENT

Location

Foster and Stutsman Counties in east-central North Dakota. The reservoir extends about 40 miles north from Jamestown, and the irrigable area about 40 miles south from that city.

Purpose

Irrigation and flood control.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887), and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1940; advanced planning, 1950; construction, 1952.

Date of functional completion of construction. Dam and reservoir to be functionally complete in fiscal year 1954. Irrigation development temporarily deferred.

Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1952, $640,000.

Costs

Original estimated cost	$6,984,000
Allocation of cost: Unallocated	6,984,000
Present estimated cost	8,576,000
Allocation of cost:	
Irrigation	4,058,000
Flood control	3,863,000
Fish and wildlife	60,000
Recreation	71,000
Municipal	524,000

Repayment

Status of repayment contract negotiations.

No repayment arrangements have been completed. Jamestown Dam is being constructed initially for flood-control negotiations for municipal irrigation water service and repayment contracts will be completed prior to initiation of other works.

Amount to be repaid and repayment period:

A 40-year repayment contract with not to exceed a 10-year development period will be negotiated to provide for the payment of distribution system costs assigned for payment by irrigation. Additional construction payments will occur in connection with the construction component in water-service charges for irrigation and municipal water uses.

Repayment of costs allocated to irrigation

Water users	$884,000
Missouri River Basin project pooled-power revenues	3,174,000
Total	4,058,000

Repayment costs per acre

Federal investment per acre	$406.00
Water users	88.00
From power revenue	318.00
Annual water-user charges:	
Construction	[1] 1.65
Operation and maintenance	5.41
Total	7.06
Increased net income per acre resulting from irrigation (payment capacity)	7.62

[1] Payment at this rate (75 percent of repayment ability) during initial 40-year repayment period will require a subsequent water-service contract with $1.65-per-acre construction component for 13 years to return full cost payable by water users.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres): Full				10,000
Total				10,000

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$8,660,000
Total obligations to June 30, 1952	894,829
Allotment, fiscal year 1953	1,880,000
Prior year balance available	366,917
Total obligations, fiscal year 1953	2,246,917
Allotment, fiscal year 1954	1,657,000
Total obligations, fiscal year 1954	1,657,000
Balance to complete	3,861,254

JUSTIFICATION OF ESTIMATE

Location

This unit is located in Foster and Stutsman Counties in east-central North Dakota. The reservoir extends about 40 miles north from Jamestown, and the irrigable area about 40 miles south from that city.

Description

Jamestown unit consists of Jamestown Dam and Reservoir and 10,000 acres of irrigable land to be served by several pumping plants lifting water from James River. The dam will provide much-needed flood control for Jamestown and

other cities and farmland in North and South Dakota. It will impound return irrigation flows from the Crosby-Mohall area for diversion to Jamestown unit irrigable lands, and serve the irrigable land in the Oakes unit.

Repayment

No repayment arrangements have been completed. Jamestown Dam, a multiple-purpose feature of the Missouri-Souris division, is being built initially for flood control. Negotiations for municipal and irrigation-water service and repayment contracts will be completed prior to initiation of other works.

Status

To provide for early flood control, construction of Jamestown Dam was started in fiscal year 1952. Design includes irrigation and municipal water as well as flood-control features. As soon as additional water is available from Crosby-Mohall and other areas, the irrigable land of the unit will be developed.

A reconnaissance investigation was made of potential irrigable lands, and has been followed by semidetailed land-classification and drainage studies. Extent of past floods was investigated and flood-control requirements and benefits were furnished by the Corps of Engineers. Pollution abatement studies have been made for James River in cooperation with the United States Public Health Service and the State health department. A report on development of wildlife habitat was substantially completed by June 30, 1952, by the Fish and Wildlife Service. The National Park Service has completed studies on recreational facilities required at the reservoir. The definite plan report justifying Jamestown Dam on the basis of flood control was completed in December 1951. Construction was started in the last quarter of fiscal year 1952. Right-of-way for the dam and areas adjacent to it has been acquired, and that for the reservoir will be well advanced in fiscal year 1953. Clearing of the reservoir area will be substantially completed and construction of relocations will be started.

Work proposed, fiscal year 1954

Construction of Jamestown Dam will be completed and storage capacity will be available to capture the spring flood in 1954. Acquisition of reservoir right-of-way will be completed. Relocation of portions of the Buchanan Road will be completed. Experimental installations to serve a 1,000-acre trial irrigation development by ground water will be continued in the Oakes vicinity.

Justification

Jamestown Dam, a multiple-purpose dam of the Missouri-Souris development, is urgently needed now for immediate relief from disastrous floods affecting the city of Jamestown, N. Dak., and downstream areas. It will provide 230,000 acre-feet of storage for initial flood control and municipal water, and later irrigation development.

Jamestown has suffered a recurrence of disastrous floods, and preventive steps are necessary to stop further losses of lives and property. In 1948 over one-fifth of the entire city was flooded and damage was estimated at over $600,000. In 1950 a repetition on a larger scale took place, flooding out 2,500 to 3,000 people, and causing severe economic loss.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Jamestown dam and reservoir	$4,691,000	$568,469	$2,401,000	$1,609,531	$112,000
Pumping plants	1,746,000	3,000			1,743,000
Laterals	805,000				805,000
Drains	591,000	2,000			589,000
Farm unit development	35,000				35,000
Distribution lines and substations	473,000				473,000
General property	235,000			34,000	201,000
Total cost	8,576,000	573,469	2,401,000	1,643,531	3,958,000
Construction facilities		27,417	4,000	−31,417	
Unit investigations			50,000	50,000	−100,000
Transfers, credits, and other expenditures	84,000	93,895	−8,035	−5,114	3,254
Total expenditures	8,660,000	694,781	2,446,965	1,657,000	3,861,254
Unliquidated obligations		200,048	−200,048		
Total obligations	8,660,000	894,829	2,246,917	1,657,000	3,861,254
Method of financing:					
Allotment, fiscal year 1953			1,880,000		
Prior year balance available			366,917		
Allotment required				1,657,000	3,861,254

Mr. JENSEN. You are asking for $1,657,000 for work on this project for fiscal 1954.

What plans do you have for irrigation features on this project?

Mr. LINEWEAVER. The irrigation in connection with the Jamestown Dam has not been proposed for construction pending further explorations downstream from the dam. The Senate committee last year directed us to make some exploration with respect to the use of underground water. Nothing in connection with Jamestown, so far as irrigation is concerned, is requested in this budget.

Mr. JENSEN. This project is for irigation and flood control. There is no power in this project?

Mr. LINEWEAVER. No, sir. In regard to the present estimate before you, Mr. Chairman, I am happy to report there is a reduction of a little over $2 million in the total estimated cost. That comes about because we had very favorable bids on the dam and we have reflected that in our justifying statement.

We have a statement which we would like to submit for the record on this project.

Mr. JENSEN. Without objection, it will be inserted at this point.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

The Jamestown unit is a part of the comprehensive development of the Missouri River Basin project as authorized in 1944. The Jamestown Dam and reservoir will regulate natural runoff for flood control, municipal water supply, recreation, fish and wildlife conservation, and other uses. The reservoir will ultimately be used for regulation of irrigation water required downstream with plans providing for future power generation if it is later found feasible.

The spring floods of 1950 caused considerable damage to numerous cities in North Dakota, particularly to the city of Jamestown in the flood plain of the Jamestown River at the confluence of Pipestone Creek. The Corps of Engineers and the Bureau of Reclamation were directed to study and report on the feasibility of measures to alleviate damages from such destructive floods. The result was

that the Second Supplemental Appropriation Act of fiscal year 1952 provided funds for the start of construction of Jamestown unit in the spring of 1952. The construction started at that time provided primarily for early flood control but included provisions for irrigation and municipal water as well. When additional water is available from other units of the Missouri River Basin project the irrigable lands of the unit will be developed.

During the early part of fiscal year 1953 construction work on Jamestown Dam and Reservoir continued at an unusually rapid pace. The right-of-way for the dam and areas adjacent to it has been acquired. During the remainder of the fiscal year 1953 construction season the dam construction will continue under the prime contract, right-of-way for the lower reservoir area will be acquired, reservoir clearing operations will be substantially completed, and road relocation work will be undertaken.

Funds are necessary for the completion of the construction of Jamestown Dam during fiscal year 1954 so that storage capacity will be available to retain the spring floods in 1954. Funds will also be required to complete the acquisition of reservoir right-of-way and to complete portions of the Buchanan road relocation. The pilot groundwater irrigation development for a part of the experimental area in the Oakes vicinity will be completed during the first half of the fiscal year and additional investigations for this development will continue.

It is of utmost importance that the construction of the Jamestown Dam and appurtenances be completed as scheduled for fiscal year 1954 to help provide the urgently needed flood control for Jamestown and other cities and farmlands in North and South Dakota. In addition to the 230,000 acre-feet of storage for initial flood control, the completion of the dam and reservoir will provide storage for municipal water and irrigation developments.

KIRWIN UNIT, KANSAS

Mr. JENSEN. The next item is the Kirwin unit in Kansas.

We will insert at this point in the record the special data requested by the committee of the Bureau and pages 521 through 524 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION

Missouri River Basin project, Kirwin unit, Kansas

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$1,682,672	$3,859,906	$8,659,000
Unliquidated obligations	53,906	300,000	−300,000
Total obligations	1,736,578	4,159,906	8,359,000

HISTORY OF PROJECT DEVELOPMENT

Location

In north central Kansas along the North Fork of the Solomon River in Phillips, Smith, and Osborne Counties.

Purpose

Irrigation, flood control, fish and wildlife, and recreation.

Authorization

The Missouri River Basin project of which this unit is an integral part was authorized by the Flood Control Act of December 22, 1944 (58 Stat. 887), and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1941.
Advanced planning, 1946.
Construction, 1952.
Date of functional completion of construction, fiscal year 1958.
Fiscal year and amount of initial allotment, fiscal year 1952, $2,702,000.

Costs

Original estimated cost	$10,000,000
Allocation of cost: Unallocated	10,000,000
Present estimated cost	24,037,000
Allocation of cost:	
Irrigation	10,619,000
Flood control	13,382,000
Fish and wildlife	25,000
Recreation	11,000

Repayment

Status of repayment contract negotiations.

The Kirwin Irrigation District has been formed, and contract negotiations are nearing completion.

Amount to be repaid and repayment period:

The proposed 40 year repayment contract, with a 5-year development period, provides that the district will repay not to exceed $1,500,000 toward distribution system costs. Additional construction costs will be returned by irrigation through the construction component in water service charges.

Repayment of costs allocated irrigation

Water users	$2,556,000
Missouri River Basin project pooled power revenues	8,063,000
Total	10,619,000

Repayment costs per acre

Federal investment per acre	$1,062.00
Water users	256.00
From power revenue	806.00
Annual water user charges:	
Construction	[1] 4.20
Operation and maintenance	3.28
Total	7.48

[1] Annual payments of $4.20 per acre during initial 40-year repayment period will require a subsequent water service contract with $4.20 per acre construction component for 21 years to return costs payable by water users.

Increased net income per acre resulting from project irrigation (payment capacity, $9.67.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres), full				10,000
Total				10,000

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$24,037,000
Total obligations to June 30, 1952	1,736,578
Allotment, fiscal year 1953	4,159,906
Total obligations, fiscal year 1953	4,159,906
Allotment, fiscal year 1954	8,359,000
Total obligations, fiscal year 1954	8,359,000
Balance to complete	9,781,516

JUSTIFICATION OF ESTIMATE

Location

This unit is located in north-central Kansas along the North Fork of the Solomon River in Phillips, Smith, and Osborne Counties. The project lands extend from Kirwin Dam, adjacent to the town of Kirwin, Kans., southeastward to Portis, Kans.

Description

Kirwin unit consists of the multiple-purpose Kirwin Dam and Reservoir of 315,000 acre-feet capacity and the canal, lateral, and drainage systems required to serve 10,000 irrigable acres. Substantial benefits will accrue from flood control, irrigation, fish and wildlife conservation, and enhancement of recreational opportunities. Unit lands will be served by a canal system originating at the irrigation outlet works in the dam. The main canal, serving lands on the north side of the river, will extend to the approximate midpoint of the unit, where it divides into north and south canals. The north canal continues along the north side to supply that area; the south canal siphons across the river to serve irrigable acres on the south side.

Repayment

The Kirwin Irrigation District has been formed and a board of directors elected. The negotiation of the proposed water service and repayment contract with the Kirwin Irrigation District is nearing completion and execution of the contract early in calendar year 1953 is anticipated.

Status

Construction of Kirwin Dam started March 19, 1952. As of June 30, 1953, the dam foundation will have been completed and work will have started on contracts for dam embankment and spillway, and for necessary relocation of the Missouri Pacific Railroad around the reservoir.

Work proposed, fiscal year 1954

Program for fiscal year 1954 includes continuation of construction of Kirwin Dam and completion of Missouri Pacific Railroad relocation. Construction will be initiated on Kirwin main canal and laterals, and preconstruction activity carried on for remainder of the irrigation facilities.

Justification

The unprecedented Kansas River flood of July 1951 fully demonstrated the need for regulation, control, and beneficial use of the water resources of the basin. In November 1951, Congress appropriated funds to initiate construction of the multiple-purpose Kirwin Dam and Reservoir and thus enable the early realization of flood-control benefits. Irrigation facilities are scheduled for construction to permit utilization of storage water as it becomes available. A definite plan has been completed, the Kirwan Irrigation District has been formed, and a repayment contract will be forthcoming in the near future. The sponsors of the Kirwin unit have been the leaders in revamping the antiquated irrigation laws in Kansas. They have clearly indicated, through their persistent efforts to speed up the organization of an irrigation district and repayment contract, that they want an early start of construction of irrigation facilities. Any delay in the proposed program will postpone the application of irrigation water to 10,000 semiarid acres at a time when higher food-producing potential is needed to bolster our national defense and support our increasing population.

The total estimated cost of the Kirwin unit has been increased from $18,187,000 to $24,037,000 (anticipated total obligations $24,037,000). This cost increase results in the most part from enlargement of the Kirwin reservoir from

200,000 to 315,000 acre-feet. Capacity of the reservoir was increased upon advice of the Corps of Engineers after consideration of new data made available by the 1951 Kansas flood. The remaining portion of the cost increase is attributable to more firm estimates established as the result of the completion of the definite plan report for the unit.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Kirwin Dam and Reservoir	$19,662,000	$1,497,956	$3,689,906	$8,343,000	$6,131,138
Kirwin Main Canal	1,010,000	23,000	65,000	135,000	787,000
Kirwin North Canal	658,000	17,000	20,000	38,000	583,000
Kirwin South Canal	652,000	20,000		40,000	592,000
Kirwin laterals, Main Canal	425,000	5,000	20,000	50,000	350,000
Kirwin laterals, North Canal	541,000	9,000	6,000	20,000	506,000
Kirwin laterals, South Canal	292,000	6,000		14,000	272,000
Kirwin drainage system	607,000	9,000			598,000
Farm unit development	44,000	1,000			43,000
General property	110,000			19,000	91,000
Kirwin recreation development	36,000				36,000
Total cost	24,037,000	1,587,956	3,800,906	8,659,000	9,989,138
Construction facilities			20,000		−20,000
Stores		1,167			−1,167
Project investigations			39,000		−39,000
Transfers, credits, and other expenditures		93,549			−93,549
Total expenditures	24,037,000	1,682,672	3,859,906	8,659,000	9,835,422
Unliquidated obligations		53,906	300,000	−300,000	−53,906
Total obligations	24,037,000	1,736,578	4,159,906	8,359,000	9,781,516
Method of financing:					
Allotment, fiscal year 1953			4,159,906		
Allotments required				8,359,000	9,782,000

Mr. JENSEN. Do you have a statement in regard to this unit?

Mr. MARKWELL. I have a statement on construction, Mr. Chairman, which I would like to submit for the record.

Mr. JENSEN. Without objection, it is so ordered.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

The principal feature of the Kirwin unit is Kirwin Dam now under construction. The dam, with a storage capacity of 315,000 acre-feet, is on the Solomon River in north-central Kansas and will contribute greatly to controlling flood waters entering the Kansas River. The necessity for a dam at this location was demonstrated by the devastating flood that converged on Kansas City in 1951. Other features of the project are canals, laterals, drains, and related works to provide irrigation water to 10,000 acres of land. The contract for the dam foundation has been completed and contracts have beeen awarded for construction of the dam embankment and relocation of the Missouri Pacific Railroad.

During fiscal year 1954 work will be continued on the dam construction and railroad relocation around the reservoir. Funds requested for fiscal year 1954 will also permit construction to be started on the Kirwin Main Canal and laterals and preconstruction activity to be continued on the remainder of the irrigation facilities. The sponsors of the Kirwin unit have been instrumental in getting the antiquated irrigation laws of Kansas revamped to facilitate construction of this project and are extremely desirous of having construction expedited so irrigation water will become available as early as possible.

Mr. LINEWEAVER. I would like to make a statement with regard to the progress of the repayment contract in connection with irrigation, which is not being asked for at this time.

Mr. JENSEN. Has the water service and repayment contract of the Kirwin Irrigation District been executed?

Mr. LINEWEAVER. No, sir. The negotiations are in progress and we think we have reached a pretty fair basis.

Mr. JENSEN. Has the relocation of the Missouri-Pacific railroad tracks been accomplished?

Mr. MARKWELL. It has not been accomplished. There are funds in the request for continuation of that relocation.

Mr. JENSEN. Who is going to decide that question as to who is going to pay the bill for relocating the track?

Mr. LINEWEAVER. There have been negotiations between the railroad and the Bureau and a relocation agreement has been executed.

Mr. JENSEN. That is the question they are trying to resolve at the present time?

Mr. MARKWELL. Yes, sir

Mr. JENSEN. When do you expect the decision on that?

Mr. MARKWELL. That is moving along at the present time, Mr. Chairman. The negotiations have been completed fixing the work to be done by the Bureau and that to be done by the railroad, and a contract awarded for the construction.

Mr. JENSEN. Is there any major controversy on that issue, or is it just one of these things that comes about in every instance of this nature?

Mr. LINEWEAVER. In every instance where the railroad is relocated, it requires negotiations and then the point comes up as to whether or not the line is improved by the relocation. Those are matters that the engineers for the railroad and the Bureau thrash out. We have had it on Boysen Dam and Trenton Dam, and we are having it here, and will have it at Webster.

Mr. JENSEN. I was wondering if there was any question involved here that was not customary in matters of this nature?

Mr. MARKWELL. There is nothing unusual, sir.

LOWER MARIAS UNIT, MONTANA

Mr. JENSEN. The next item is the lower Marias unit in Montana, and we will insert in the record at this point the special data sheets on this project as furnished the committee by the Bureau and pages 526–530 of the justification.

(The matter referred to is as follows:)

CONSTRUCTION

Missouri River Basin project, Lower Marias unit, Montana

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$2,387,694	$2,655,389	$7,461,000
Unliquidated obligations	58,497	−58,497	
Total obligations	2,446,191	2,596,892	7,461,000

HISTORY OF PROJECT DEVELOPMENT

Location

North-central Montana in counties of Liberty, Hill, Chouteau, and Toole.

Purpose

Irrigation, flood control, power, and recreation.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887), and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1903; advanced planning, 1946; and construction, 1952.

Date of functional completion of construction, fiscal year 1967. Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1949, $750,000.

Costs

Original estimated cost	$19,700,000
Allocation of cost, unallocated	19,700,000
Present estimated cost	64,300,000
Allocation of cost:	
Irrigation	56,794,000
Power	1,733,000
Flood control	5,565,000
Recreation	111,000
Municipal	97,000

Repayment

Status of repayment contract negotiations: The Marias Irrigation District, covering about two-thirds of the unit irrigable area, was established in 1950 and contract negotiations are well advanced. The remainder of the area could be added to the Marias district, or another district organized.

Amount to be repaid and repayment period: A 40-year repayment contract, with not to exceed a 10-year development period, is being negotiated with the Marias Irrigation District to provide for repayment of distribution system costs assigned for repayment by irrigation. Additional construction costs will be returned by irrigation through the construction component in water service charges. Similar arrangements will be required when areas outside the existing Marias Irrigation District are developed for irrigation purposes.

The power allocation will be repaid within 50 years from the date the facility becomes revenue producing. All project revenues are consolidated to achieve projectwide payout of reimbursable construction costs. Irrigation, fish and wildlife, and recreation allocations are considered reimbursable and are to be repaid by the beneficiaries or from power revenues and application of interest components related to interest-bearing investments.

Repayment of costs allocated to irrigation

Water users	$23,020,000
Power: Missouri River power revenues	33,774,000
Total	56,794,000

Repayment costs per acre

Federal investment per acre	$448.00
Water users	182.00
From power revenue	266.00
Annual water-user charges:	
Construction	[1] 2.75
Operation and maintenance	2.53
Total	[2] 5.28

[1] To return in full costs payable by water users. This rate of payment would necessitate an additional water-service contract following initial 40-year repayment period to run for 25 years with construction component of $2.75 per acre.

[2] To allow for contingencies in payment capacity determination, annual water charge estimated to approximate 75 percent of increased payment capacity.

Increased net income per acre resulting from project irrigation (payment capacity), $7.06.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres) full				127,000
Total				127,000
Power (kilowatts)				3,600
Power rates (mills per kilowatts):				
Firm at 50 percent load factor				$5.5
Nonfirm (acreage)				3.0

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$66,719,083
Total obligations to June 30, 1952	2,446,191
Allotment, fiscal year 1953	2,500,000
Prior year balance available	96,892
Total obligations, fiscal year 1953	2,596,892
Allotment, fiscal year 1954	7,461,000
Total obligations, fiscal year 1954	7,461,000
Balance to complete	54,215,000

JUSTIFICATION OF ESTIMATE

Location

Lower Marias unit is in north-central Montana in the counties of Liberty, Hill, Chouteau, and Toole.

Description

The unit will use water from the Marias River to irrigate approximately 127,000 acres of dry-farmland. The principal water conservation and control structure of the unit will be Tiber Dam and Reservoir. Tiber Dam will be located on the Marias River, 13 miles south and 6 miles west of the town of Chester, Mont. The dam will be an earthfill structure, 196 feet high at the maximum section, and will have a crest length of 4,300 feet. The reservoir extends upstream for 25 miles and covers about 22,800 acres of land which is largely grazing and waste. Total storage capacity (exclusive of 56,000 acre-feet of superstorage) will be 1,337,000 acre-feet, including 575,000 acre-feet of dead and silt storage, 362,000 acre-feet active irrigation storage, and 400,000 acre-feet flood storage. The intake tower and penstock will be constructed to provide for future installation of a 2,000-kilowatt powerplant. The lands will be served by gravity and pumps. Also included in the ultimate scheme is the Kenil powerplant, along one of the main canals, which can furnish seasonal power to partially service the proposed pumping stations.

Status

Preconstruction surveys and studies began in fiscal year 1946. Construction of the Government camp began in fiscal year 1950. Construction of Tiber Dam had been scheduled to start in fiscal year 1951, but bids were rejected because clearance was not given by the Bureau of the Budget for the start of construction in fiscal year 1951 or fiscal year 1952. As of June 30, 1952, the first phase of the Government camp was almost complete. Default of the contractor on contract for building temporary and permanent housing at Tiber camp had delayed completion. A zoning report on materials for Tiber Dam had been completed. Collection of design data for mile 0 to 39 of the Marias Canal was underway. Studies were under way on detailed land classification and drainage facilities. Volume I of the definite plan report was approved in December 1949, for construction of the dam and the Marias Irrigation District was created in June 1950. Approval had been given to go ahead with construction based on a resolution by

the irrigation district. The prime contract for construction of Tiber dam and dike and the Marias Canal headworks was awarded in September 1952 and construction operations are well advanced. A contract to furnish cement has been awarded. Volume III of the definite plan report (design data for Marias Canal, mile 0 to 14) will be completed by June 30, 1953. Detailed surveys and studies will be underway on the Marias Canal, mile 14 to 39.9. The Secretary has approved the land classification. Water service and repayment contract negotiations, now underway, will be completed prior to initiation of construction of specific irrigation works.

Work proposed, fiscal year 1954

The prime contractor for Tiber Dam will continue full-scale operations. A contract will be awarded for furnishing gates, hoists, and trashracks for the dam. Work will be underway on the preparation of final designs for Marias Canal (mile 0 to 14). Volume IV of the definite plan report (design data for Marias Canal, mile 14 to 39.9) will be completed. Detailed surveys and studies will be initiated on Marias Canal, mile 39.9 to 77.1. Detailed surveys and studies will likewise be initiated on the lateral and drainage systems. Construction will begin on the development farm, and on the Marias camp, which will be a permanent camp designed to serve as project operation and maintenance headquarters when actual irrigation water is delivered to the unit. Detailed land classification work will continue.

Justification

The need for construction of the lower Marias unit has been demonstrated by the low crop yields and failures during a majority of years since the land was homesteaded in 1910–12. Following the latest dry cycle of 1930's, the period 1938 through 1945 was outstanding for its abnormal precipitation and high production. Since 1945, there has been a definite downward trend in annual precipitation. An irrigation district has been formed. The commissioners of the district adopted a resolution on June 17, 1950, in which they agreed to negotiate a contract with the United States on the basis of repayment of $21,380,000 of the total project cost, which has been assigned for repayment by irrigation interests. (This resolution was reaffirmed in August 1952.) Work programed for fiscal year 1954 is essential to the achievement of an orderly construction program to insure delivery of irrigation water to unit lands at the ealiest possible date.

The total estimate of cost of the project has increased from $59,969,000 to $66,940,000 (anticipated total obligations $66,719,083) due to advancing costs of labor and supplies.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Tiber Dam and Reservoir	$21,382,000	$1,202,747	$2,253,000	$6,872,000	$11,054,253
Lonesome Lake Dam and Reservoir	281,000	7,346			273,654
Sandy Gravity diversion dam	63,000	1,833			61,167
Marias Canal, mile 0 to 14	18,526,000	530,558	90,000	77,000	17,828,442
Marias Canal, mile 14 to 39.9	2,660,000	69,863	51,000	50,000	2,489,137
Marias Canal, mile 39.9 to 77.1	1,938,000	51,450	3,000	39,000	1,844,550
Kenilfeeder canal	1,097,000	29,398			1,067,602
Kenil gravity canal	654,000				654,000
Pumping plant and canals	2,601,000	31,245		14,000	2,555,755
Sandy gravity canal	1,498,000	39,514			1,458,486
Laterals	7,550,000		1,000	39,000	7,510,000
Drains	4,102,000			38,000	4,064,000
Farm units	1,120,000		20,000	35,000	1,065,000
Tiber powerplant and switchyard	884,000	19,295			864,705
Kenil powerplant and switchyard	963,000	26,641			936,359
Pumping plant lines and substations	40,000	923			39,077
General property (permanent camp at Tiber)	209,000	76,138	66,500	−3,695	70,057
General property (Marias Camp and equipment)	1,261,000	33,078		131,000	1,096,922
General property (recreational development)	111,000	1,833			109,167
Total cost	66,940,000	2,121,862	2,484,500	7,291,305	55,042,333
Construction facilities		475,171	180,165	164,695	−820,031
Stores			2,802	5,000	−7,802
Project investigations					
Operation and maintenance during construction					
Transfers, credits and other expenditures	−220,917	−209,339	−12,078		500
Total expenditures	66,719,083	2,387,694	2,655,389	7,461,000	54,215,000
Unliquidated obligations		58,497	−58,497		
Total obligations	66,719,083	2,446,191	2,596,892	7,461,000	54,215,000
Method of financing:					
Transfer to project, fiscal year 1953			2,500,000		
Prior year balance available			96,892		
Allotments required				7,461,000	54,215,000

Mr. JENSEN. You are asking for $7,461,000 for this project for fiscal 1954?

Mr. MARKWELL. Yes, sir. I have a statement on construction on that project.

Mr. JENSEN. Without objection, the statement will be inserted at this point.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

The lower Marias unit was authorized in 1944 as part of the comprehensive development of the Missouri River Basin project for irrigation, flood and silt control. Five years later initial construction funds were appropriated and considerable work was accomplished during 1949 and 1950. However, funds which were appropriated in fiscal year 1951 for the construction of Tiber Dam were impounded. In the meantime bids were opened for the construction of Tiber Dam but no contract was awarded.

In the fiscal year 1953 Appropriations Act sufficient funds were again appropriated so that construction could be started on Tiber Dam. Specifications for the construction of the dam, dike and transmission lines were then issued in July 1952 and a contract awarded in September 1952. This work is now well under way. The first contract covering the Government camp was completed in December 1952 and another portion of the camp was awarded as a construction contract in October 1952.

Funds are necessary in 1954 for the continuation of full-scale construction operations of the prime contract covering the construction of Tiber Dam. The initiation of work on the Marias Government camp is also necessary. Right-of-way acquisitions must be completed to avoid complications in connection with construction activities and the operation of certain portions of the project. Delivery will be made on gates, hoists, and trashracks so that construction on Tiber Dam will not be delayed. Detailed designs will be prepared on the first 14 miles of the Marias Canal so that construction operations can get under way in the fall of fiscal year 1954. The definite plan report covering that portion of the Marias Canal from mile 14 to mile 39.9 will be completed and design data submitted to the Chief Engineer for the preparation of construction specifications. Collection of design data will be initiated for the remaining portion of the Marias Canal. Detailed surveys and studies will be initiated on other canals and laterals (with work concentrated in the area to be served by the midportion of the Marias Canal) and on the drainage system. Plans for the development farm will be completed and the farm started during fiscal year 1954. Minor construction and supply contracts will be awarded and construction will continue on portions of the construction camp facilities.

Teh funds requested for fiscal year 1954 are urgently needed for the orderly completion of construction and development of irrigation on 127,000 acres of dry land in north central Montana. Only through the completion of these irrigation facilities can an adequate quantity of winter feed for livestock be assured. During the 1930's severe drought and duststorms destroyed vegetation, homes and farm buildings, and a high percentage of livestock in a large area of the dry Great Plains. This disaster caused the migration of a large percentage of people out of this area in Montana. With the tremendous need for a stabilized economy and maximum production of food and forage, it is imperative that such devastating experiences not be repeated.

Mr. JENSEN. This includes irrigation, flood control, power and recreation projects. It is understood that the contractor may have to shut down because of lack of funds before the end of 1953?

Mr. LINEWEAVER. I have a statement on that, Mr. Chairman, that the regional director prepared and sent in, and that is probably true. That is in the same category as Palisades.

Mr. JENSEN. That is due to the good weather which we have had which premitted the contractor to progress faster than was anticipated: is that correct?

Mr. LINEWEAVER. Yes, sir; that is right.

Mr. JENSEN. We will receive the statement for the record at this point, without objection.

(The matter referred to is as follows:)

CONSTRUCTION AND REHABILITATION

REQUIREMENT FOR INCREASED FUNDS, FISCAL YEARS 1953 AND 1954

A recent analysis of construction progress and field conditions on the lower Marias unit indicates that additional funds will be needed in fiscal years 1953 and 1954 if the main project structures are to be completed on schedule and the project goals of irrigated acres and generating capacity are to be achieved as programed. The major portion of the additional requirement is for contract earnings in connection with the construction of Tiber Dam which is the largest single feature on the project. Progress on this feature will largely control development of the entire unit.

The construction of Tiber Dam and the attendant dike sections requires a great quantity of earth excavation and placing. Because of the large area involved, it is possible, in the early construction stages, to operate a large number of pieces of equipment which results in high early contract earnings. Later in the progress of the work the working area is reduced and contractor's earnings decline. The prime contractor for the Tiber Dam has moved in a large amount of equipment and is making excellent progress. Based on the size and character of his construction plant and his demonstrated ability to perform the work, it is now estimated that $600,000 in addition to the current reservation of

$1,700,000 can be earned in fiscal year 1953 and a total of $6 million in fiscal year 1954. It further appears from analysis of the contractor's proposed program and the nature of the operation involved that progress must be made at the rate proposed if the construction of Tiber Dam is to be completed within the 1,200 days allowed by the contract.

With the expenditure of $8,300,000 by the end of fiscal year 1954, 65 percent of the contract amount will be earned with 55 percent of the time elapsed. However, it is necessary that earnings be ahead at that stage of construction if the job is to be completed on schedule. River diversion and preparatory work will have been completed in fiscal year 1953 providing unlimited area for construction and permitting required progress on large pay items. As the job progresses toward completion, work areas will become restricted and earnings will be reduced accordingly.

Unusually good weather has prevailed throughout the present winter allowing earthwork construction up to December 20, 1952, about 1 month later than normally, and allowing work to proceed on the diversion tunnel, the transmission line, and the contractor's buildings at an accelerated rate. As of January 31, 1953, the contractor had earned $643,983. He plans to resume earthwork and other construction full scale in March. It is probable that river diversion will be completed late in June. Based on this analysis of progress, the contractor would exceed the $1,700,000 presently reserved in May 1953.

It should be noted that the requirement for additional funds in fiscal years 1953 and 1954 is balanced by a reduction in fund requirements in fiscal year 1955 and no increase in the total cost of the work is contemplated.

In addition to the additional funds required for contractor's earnings, a relatively minor amount above the current allowance is needed for employee housing on the project. The fiscal year 1953 requirement for additional housing is $100,000 with $25,000 required in fiscal year 1954 in addition to the current program. The housing is required for Government personnel to administer the prime contract.

At the time the initial budget request was submitted in July 1952 there were numerous unsolved questions. There were in various degrees of completion 30 houses and a bunkhouse. Potential plans for fiscal year 1953 were for the installation of seven trailers. It was felt at that time that existing housing might be adequate, assuming that it would be possible that some employees would be able to find housing outside of the camp and that there would be a satisfactory ratio of single men to married men. Likewise, the rate of progress and items of work to be first undertaken by the potential contractor was not known at that time. After the start of construction in October and the receipt of the contractor's construction program, it was apparent that a force of 58 employees would be required by the end of the fiscal year to service the contract. Despite efforts to obtain single men, very few could be recruited. In order to provide school facilities, it was necessary to temporarily convert the bunkhouse into a schoolhouse. A survey of neighboring towns indicated that these towns (closest town is Chester, population 733) did not have facilities for employees. The contractor experienced the same difficulty and is constructing dormitories and installing trailers near the site of construction.

The amount of $100,000 for fiscal year 1953 would be adequate to start construction of 10 or more temporary houses to be completed in the summer of 1953. This amount plus $25,000 in addition to the funds contained in the fiscal year 1954 request appear adequate. While it is recognized that the housing cannot be completed in time to alleviate the condition this spring, it is proposed that temporary facilities, such as trailers, be provided and utilized until the residences are completed. If the $100,000 cannot be obtained in fiscal year 1953, it would be required in fiscal year 1954.

The project cannot recruit personnel without housing as there are no other places to live. Difficulty will be experienced in administering the prime contract if the minimum staff is not set up this spring.

Additional funds for development farmwork in fiscal years 1953 and 1954 are also very important for efficient and orderly development of the lower Marias unit. It is estimated that $100,000 in fiscal year 1953 and $50,000 in fiscal year 1954 above the amounts now scheduled are necessary to carry out this activity properly. The necessity for this additional development farmwork is explained in a separate statement.

In connection with the previously described operations, there will be certain administrative and miscellaneous costs which must also be financed in fiscal year 1953. Need for these funds, in the amount of $100,000, is described below:

Land and rights, increase $14,000.—This increase is required to purchase lands needed for the initial construction year.

Cement contract, increase $15,000. The schedule of the contractor shows placement of items of concrete earlier than initially proposed.

Minor supply contracts, increase $29,000.—The requirement for additional materials and equipment is correlated with the contractor's schedule for installation.

Miscellaneous construction, increase $20,000.—An uncompleted contract for camp construction was defaulted on by the contractor. The work was completed under another contract and the increased cost will probably not be returnable until fiscal year 1954.

Operation and maintenance of construction facilities, increase $10,000.—The transmission line and substation was not constructed as early as anticipated increasing the cost of furnishing temporary power by diesel units.

General expense, increase $12,000.—This increase covers designs for the development farm and for additional housing and associated engineering and supervision costs.

All of these increases facilitate contract administration. Even though additional funds for fiscal year 1953 are not obtained for the prime contract these items will be required.

Recapitulation of the various additional fund requirements shows that for most efficient and orderly development of the project and to assume maintenance of current project goals, the fund requirements for the lower Marias unit should be adjusted as shown in the following table:

New fund allotments

	Fiscal year 1953	Fiscal year 1954	Fiscal year 1955
Present program	$2,500,000	$7,461,000	$13,679,000
Revision	+900,000	+850,000	−1,750,000
Recommended program	3,000,000	8,311,000	11,929,000

Mr. JENSEN. What do the soil investigations show on this project, and how extensive were the investigations?

Mr. EATON. The investigations, Mr. Chairman, were extensive and very intensive, primarily for the reason that we were encountering soils here on which there is only limited, if any, irrigation experience in this country. There is a great deal of irrigation on almost identical soils up in certain regions in Canada, and because of that successful use up there, we have been encouraged in our hopes here. We are now thoroughly assured that we have a good project there, but one which will have to be handled very carefully by the irrigators themselves, because of the low rate at which water goes out of the soil. It is soil that can be waterlogged if not properly handled by the irrigators.

Mr. LINEWEAVER. I would like to add there, Mr. Chairman, to what Mr. Eaton says that preliminary arrangements have been made for the collaboration of the Bureau of Reclamation and the State college extension service and the Soil Conservation Service in the layout of the project distribution system in relation to land ownership and when project facilities are ready, to assist the farmers in converting from dryland farming to irrigation.

Mr. EATON. At the request of the irrigation district and with those cooperating agencies, we propose to establish a development farm to work out some of the irrigation practices, in advance of the actual delivery of water, and with your permission, I would like to put in a statement on that.

(The matter referred to follows:)

BUREAU OF RECLAMATION DEVELOPMENT FARM, LOWER MARIAS UNIT

The major portion of the land in the lower Marias unit is privately owned and at present is devoted to dryland farming, chiefly grains. The institution of irrigation will cause a radical change in the present farming system. In addition to aiding the settlers in making this transformation, this area has another particular need for a development farm. Because of the peculiar characteristics of the soils in this unit and the drainage problems they present, the use of water will have to be carefully controlled to prevent their waterlogging.

To accomplish this purpose new irrigation practices must be developed which will more adequate control water application, limiting such application as closely as possible to plant requirements. In order that these practices may be developed sufficiently far in advance of the delivery of water to avoid waterlogging the lands during early years of project development, the development farm should be established in fiscal year 1954. The work will be conducted in cooperation with the State college experiment station, the Bureau of Plant Industry, the Soil Conservation Service, and other interested agencies. The findings will be the basis for the information which they will disseminate to the new project settlers and may be invaluable in the early and successful development of the lower Marias unit.

The cost of the development farm may be comparatively high because of the method of irrigation that will be required. To have the farm in operation in fiscal year 1954 means irrigation before the canals and laterals are constructed. In a groundwater study made by the United States Geological Survey, it was determined that the only adequate water supply can be obtained by pumping from the Marias River with a lift of about 250 feet and transporting the water through a canal approximately 4 miles long.

Mr. JENSEN. I have a memorandum in my hand on the Tiber Dam which shows that the Bureau expended $200,000 on a transmission line and substation, instead of paying the Montana Power Co. $8,000 in aid of construction and then buying power from the company, or wheeling it over company lines.

This memorandum says, in part, and I shall ask unanimous consent of the committee to put this statement in the record, or that part which I shall read:

During 1952 numerous inquiries were made of the Montana Power's Great Falls office regarding the availability of power for the construction of Tiber Dam. The company made a definite proposal to both B. & C. Construction Co., of Denver, Colo., and to Jones & Wunderlich, who were the successful bidders.

The power company's proposal was that for a contribution in aid of construction of $8,000 and the regular general service power rate the company would deliver power at the dam site substation.

Instead of accepting the proposition made by the Montana Light & Power Co., they built a transmission line, which was for no other purpose than to transmit this power, and the Bureau of Reclamation expended $200,000, instead of taking the proposition made by the Montana Light & Power Co. which would have cost only $8,000.

What do you know about that?

Mr. MARKWELL. Mr. Chairman, the power facilities which were or are being installed at the present time are for two purposes. One of them is to get construction power. Fort Peck power is being used.

You will note theer is a small powerplant and switchward scheduled for construction in 1957 after the dam is completed and we get some water behind it.

Mr. JENSEN. I have spent some time in looking into this matter, and by no stretch of the imagination could I see the justification for the Bureau of Reclamation spending this $192,000 of the people's money for the building of this transmission line, that being the difference between the $200,000 which the Bureau is spending for that trans-

mission line and the $8,000 which the company agreed that if they had that much in aid of construction they would build it and furnish this power in adequate supply.

Mr. MARKWELL. Unfortunately, I am not familiar with the details of that. May I put a statement in the record concerning that? I do not find those same figures at the moment.

Mr. JENSEN. You will find that the statement I have just made is the bona fide truth.

Mr. MARKWELL. I am not questioning it, sir. I thought you might like a detailed statement.

Mr. JENSEN. Yes. I will be glad to have it.

(The statement referred to is as follows:)

LOWER MARIAS UNIT

TIBER DAM TRANSMISSION LINE

This transmission line is a 115-kilovolt tap line from the Bureau's Havre-Shelby line to Tiber Dam. It has been completed at a cost of $168,000, as a construction facility to get construction power into the dam and to serve as an outlet for power to be produced at a proposed small power plant at Tiber.

After this tap line was under construction it is understood that the dam contractor stated that the Montana Power Co., had made an offer to furnish the contractor's needs, however this offer was between the power company and the contractor and the Bureau has no information as to the terms of the proposal.

Before the Bureau's Havre-Shelby line was constructed, a plan was considered to wheel Fort Peck power or to purchase power by tapping the power company's Fort Benton-Chester 69-kilovolt line. This would involve about 7 miles of new single pole line and substation for the Government camp and delivery to the contractor. Considering the cost of marketing power to be produced at Tiber and the availability of the Havre-Shelby line, the plan adopted was considered the best.

After considering alternate methods of delivering power to the site for construction operations it was determined that it would be more economical and therefore in the best interest of the Government to construct the transmission line in connection with the work on the dam and to build the line to such standards that it could be used as part of the completed project for tying in the power plant with other generating units in the area. By having its own line to the construction site the Government is able to supply power generated at Fort Peck to the contractor at rates which will provide the contractor a saving in construction costs. This saving in power costs to the contractor has been reflected in more favorable bid prices than would have been the case if the contractor had been required to pay commercial rates for construction power. Also for such power as it sold the contractor the Bureau will realize a revenue of about 5½ mills per kilowatt-hour as compared to a revenue of only 2½ mills per kilowatt-hour which would otherwise result from sale of the same power to the Montana Power Co.

Mr. JENSEN. Any questions on that?

Mr. BUDGE. I would like to ask one question.

Mr. JENSEN. Mr. Budge.

Mr. BUDGE. I note that on this project, under repayment of costs allocated to irrigation, there is the amount of $33,774,000 from power, and the explanation is given in parentheses, "Missouri River power revenues." You also state on page 98a: "The power allocation will be repaid within 50 years from the date the facility becomes revenue producing."

Now, is the facility that you refer to there the plant which is on the project?

Mr. LINEWEAVER. No. That is the overall Missouri River Basin power system.

Mr. BUDGE. What project is it that becomes revenue producing?

Mr. MCPHAIL. That is the small power plant that is proposed for future construction that Mr. Markwell mentioned.

Mr. MARKWELL. I think perhaps Mr. McPhail misunderstood your question. There are quite a few power plants in the Missouri Basin that would produce the revenues to which you refer. This little power plant I mentioned, I could not produce that much.

Mr. BUDGE. This says:

> The power allocation will be repaid within 50 years from the date the facility becomes revenue producing.

Mr. MCPHAIL. I am not sure if this applies to this particular unit. All of the power plants in the Missouri Basin are grouped together and used in combination to pay the cost of the entire project.

Mr. BUDGE. That is why I cannot understand the statement that appears that the power allocation will be repaid within 50 years from the date "the facility" becomes revenue producing. What facility are you talking about?

Mr. MCPHAIL. The only facility would be this small unit.

Mr. BUDGE. And you do not know if it will ever be built or not?

Mr. MCPHAIL. That is right.

Mr. BUDGE. But you are repaying $33,774,000 for this project from power revenues, and you do not know if the facility the revenues are to come from will ever be built?

Mr. MCPHAIL. It would be repaid with revenues from the total Missouri Basin.

Mr. BUDGE. Commencing on what date?

Mr. MCPHAIL. On the date that a given facility is put in.

Mr. BUDGE. What facility? That is what I want to know.

Mr. MCPHAIL. Whatever the facility may be. We keep track of all facilities as they go in, and we see that each of those facilities is paid out in 50 years from the time they go in. A facility that did not go in until 1970 would not be paid until 2020. A facility that went in in 1960 would be paid by 2010.

Mr. BUDGE. That would be for the cost of the power installation itself, but here you have a $33,774,000 repayment which is allocated to power, and you say that the repayment will commence when the facility becomes revenue producing. What is the facility and when does the facility become revenue producing?

Mr. MCPHAIL. I think, relating that to the irrigation features of the project, that would in essence become revenue producing when the settlement on the land has been made and the requirements are placed under irrigation.

Mr. BUDGE. That would not bring in power revenue.

Mr. MCPHAIL. We use power revenue to assist in irrigation features. The costs that are above the ability of the water users to pay are paid from power revenues.

Mr. BUDGE. When are those repayments to start, and from what facility?

Mr. MCPHAIL. Within 50 years from the time that particular facility goes in. We propose in our repayment schedule to pay off interest first, and then to pick up the irrigation assistance.

Mr. LINEWEAVER. I would like for Mr. McPhail to have an opportunity, at Mr. Budge's convenience and the convenience of any other

interested member, to have about an hour's briefing session on the financial setup of the Missouri Basin projects. I think it would be refreshing for all of us to know what that is. We make a new payout schedule each year. I think Mr. Budge's question would be answered by such a briefing session.

Mr. JENSEN. I think that would be time well spent to get an overall picture of the payout schedule on the entire Missouri Valley project. After all, there is a lot of money being spent in that valley, and certainly I do not want to spend any more money for the development of that valley for any of these phases of operation that are not necessary in accordance with good business principles. So I think it would be very well to have a briefing session.

Mr. LINEWEAVER. Off the record.

(Discussion off the record.)

Mr. BUDGE. Mr. Chairman, I do not want to prolong this, but it seems to me when we have a specific project here from which the costs of irrigation are allocated to the water users in the amount of $23,020,000, and the power revenues $33,774,000, then the statement is made that the power allocation will be repaid within 50 years from the date "the facility," which is obviously the power facility, becomes revenue producing, my question is simply this: What facility repays the power allocation and when is the commencement date for the repayment? That does not seem to me to be too complicated.

Mr. LINEWEAVER. Mr. Golzé perhaps can throw some light on it, or perhaps we can answer that question at the briefing session.

Mr. JENSEN. Will you furnish a complete statement on that for the record?

Mr. LINEWEAVER. Yes. And we will be at your convenience to set up this briefing session.

Mr. JENSEN. I think Mr. Budge's question is proper.

Mr. LINEWEAVER. It is a good question.

Mr. JENSEN. And I would like to have you take your time to answer it completely and fully, then this committee shall look to Mr. Budge to analyze your answer and to see if he can agree with it.

(The information is as follows:)

LOWER MARIAS UNIT

(Statement on repayment in response to questions by Mr. Budge)

Page 98a of the special data prepared for the House subcommittee states that $56,794,000 of the total cost of the lower Marias unit is allocated to irrigation and that $23,020,000 will be paid by water users and $33,774,000 will be paid from power revenues. Page 98a also states "The power allocation will be repaid within 50 years from the date the facility becomes revenue producing." This latter statement applies to the entire Missouri River Basin project and was copied on each of the individual unit statements because the power subsidy to an irrigation unit cannot be identified by individual powerplants producing that revenue.

Power revenues from all of the basin plants are applied first to operation, maintenance, and replacement of the power facilities, and second to the retirement within 50 years of the investment in power facilities. The 50-year period, based on current construction schedules, will require approximately 80 years from 1950 or until the year 2030 assuming the last powerplant becomes revenue producing in 1980. Revenues not required for power repayment are surplus and available to repay irrigation investments. Surplus power revenues are computed to accumulate at a rate equal to the amount required to pay out irrigation investment that is in excess of the irrigation repayment.

The current payout study covers a 96-year period from 1951 to 2046 and shows that net power operating revenues will reach a maximum in 1986 and that irrigation payments will be completed in 2030 with power repaying irrigation investment until 2046.

MISSOURI DIVERSION UNIT, MONTANA-NORTH DAKOTA

Mr. JENSEN. We turn now to the Missouri diversion unit, Montana-North Dakota.

We will insert in the record at this point page 99 of the special data requested of the Bureau in regard to this project and pages 532 through 536 of the justification.

(The page referred to is as follows:)

CONSTRUCTION

Missouri River Basin project, Missouri diversion unit, Montana-North Dakota

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$1,551,826	$1,569,058	$5,737,000
Unliquidated obligations	18,581	455,419	−474,000
Total obligations	1,570,407	2,024,477	5,263,000

HISTORY OF PROJECT DEVELOPMENT

Location

Northeastern Montana in Valley, Roosevelt, Sheridan, and McCone Counties.

Purpose

Irrigation, power, municipal water, and recreation.

Authorization

The Missouri River Basin project, of which this unit is an integral part, was authorized by the Flood Control Act of December 22, 1944 (58 Stat. 887), and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1908.
Advanced planning, 1946.
Construction, 1949.
Date of functional completion of construction: After fiscal year 1959.
Fiscal year and amount of initial allotment of appropriations for construction: Fiscal year 1949, $748,900.

Costs

Original estimated cost	$23,831,000
Unallocated	23,831,000
Present estimated cost	126,665,000
Allocation of cost:	
Irrigation	51,025,000
Power	12,546,000
Recreation	85,000
Municipal	297,000
Unallocated (works to serve North Dakota)	62,712,000

REPAYMENT

Status of Repayment Contract Negotiations

Water users organizations are in the process of being established. Contract negotiations will be completed in advance of the initiation of construction of specific irrigation works.

Amount to be repaid and repayment period

Irrigation, amount, $21,020,000; repayment period development, 10 years; total, 50 years.

Irrigation

A 40-year repayment contract, with not to exceed 10-year development periods, will be negotiated with water users organizations providing for the repayment of distribution system works assigned for repayment by irrigation. Additional construction costs will be returned by irrigation through the construction component in water service charges. Water service contracts will be negotiated for municipal water service under which additional construction costs will be returned to the United States. The power allocation will be repaid within 50 years from the date the facility becomes revenue producing. All project revenues are consolidated to achieve projectwide payout of reimbursable construction costs. Irrigation, fish and wildlife, and recreation allocations are considered reimbursable and are to be repaid by the beneficiaries or from power revenues and application of interest components related to interest-bearing investments.

Repayment of costs allocated to irrigation

Water users	$21,020,000
Missouri River Basin project pooled power revenues	30,005,000
Total	51,025,000
Repayment costs per acre	
Federal investment per acre	$466.00
From power revenue	274.00
From irrigators	192.00
Annual water user charges:	
Construction	[1] 2.92
Operation and maintenance	2.73
Total	[2] 5.65

[1] To return in full costs payable by water users. This rate of payment would necessitate an additional water-service contract following initial 40-year repayment period to run for 26 years with construction component of $2.92 per acre.

[2] To allow for contingencies in payment-capacity determination, annual water charge estimated to approximate 75 percent of increased-payment capacity.

Increased net income per acre resulting from project irrigation (payment capacity), $7.53.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full				109,380
Supplemental				
Total				109,380
Power (kilowatts)				18,000
Power rates (mills per kilowatt):				
Firm at 50 percent of load factor				$5.5
Nonfirm average				$3.0

Construction and Rehabilitation

SUMMARIZED FINANCIAL DATA

Estimated total obligations	$126,840,000
Total obligations to June 30, 1952	1,570,407
Allotment, fiscal year 1953	2,000,000
Prior year balance available	24,477
Total obligations, fiscal year 1953	2,024,477
Allotment, fiscal year 1954	5,263,000
Total obligations, fiscal year 1954	5,263,000
Balance to complete	117,982,116

JUSTIFICATION OF ESTIMATE

Location

Missouri diversion unit is located in northeastern Montana, and extends through Valley, Roosevelt, Sheridan, and McCone Counties.

Description

Water will be diverted from the Missouri River below Fort Peck and carried by canal and reservoir to about the North Dakota border. Some 153,000 acres of land, which includes the 100,000 acres of the Missouri diversion unit, will be irrigated in Montana and enough additional water can be diverted to irrigate 1,108,000 acres in North Dakota. The unit consists of the diversion dam and an 18,000-kilowatt powerplant, the Missouri Canal and Medicine Lake Dam and Reservoir as the major features. The land to be irrigated will be served partly by gravity diversion and partly by pumping from the Missouri Canal. The project land is designated as Chelsea Bench, Brockton and Poplar River areas which are primarily pumping; and the N–Bar–N, Wapiti, Fort Charles, Wolf Point-Poplar, and Poplar-Brockton areas to be served by gravity, with some relift pumping required.

Repayment

An irrigation district is in effect for the N–Bar–N area and completion of repayment arangements. Schedule for June 1954. Establishment of a water-users organization is scheduled for April 1953 for the other south-side areas, and execution of repayment contracts for all the south side for June 1954. Establishment of water-users organizations for Chelsea Bench and Wolf Point-Poplar areas is scheduled for December 1953.

Status

The definite plan report for development of lands in Montana was approved in September 1952. Surveys and foundation exploration have been completed on Missouri diversion dam and Little Porcupine powerplant, Missouri Canal, and Medicine Lake Dam. Construction designs have been well advanced by the chief engineer for the dam and powerplant. Design data have been compiled for the switchyard and a construction camp, and construction designs have been started for these features. Studies have been made for stage construction of Missouri Canal.

Studies have indicated that lands of the former N–Bar–N, Wapiti, and Fort Charles units can be served economically by gravity from Missouri diversion dam. They have been included in the Definite Plan Report as areas of the Missouri diversion unit. Detailed topographic maps on about 129,000 acres of arabale land located on the north side of the river are being secured by contract.

A special report, "Study of Problems Incident to Development, Operation and Maintenance of Indian Lands Along With Other Irrigable Lands," has been prepared, describing the Indian land-ownership problem.

A contract was awarded in September 1952 for stripping the foundation of the dike section of the diversion dam. This work was completed in December. The prime contract will be awarded later in fiscal year 1953 for construction of the dam and powerplant. Contracts for construction of the switchyard, access road, two caretakers' houses, and for equipment for the dam, powerplant, and switchyard will also be awarded. A contract will be awarded for clearing part of the reservoir area behind the diversion dam. Acquisition of right-of-way

for the dam and reservoir will be started. A land-classification certification was made in September 1952.

Work proposed, fiscal year 1954

Construction will continue on the Missouri diversion dam, powerplant and switchyard. Construction of houses at the damsite will be completed. Contracts will be awarded for gasline relocation and protection to the U. S. Government railway, and equipment installation contracts for the powerplant. Accessory electrical equipment contracts will be awarded for the powerplant. Design data will be compiled and design work well started for the first portion of the Missouri Canal and for the Chelsea Bench area. Detailed land classification will be completed. Repayment negotiations will be advanced; establishment of a water-users organization for the other south-side areas is scheduled for April 1953.

Justification

A majority of both white and Indian landowners have petitioned for an early start on construction of the proposed works. The planned power installation of 18,000 kilowatts is required for irrigation pumping and to meet load growth of preference customers in the area.

The dry seasons of 1949, 1950, and 1952 were reminiscent of the disastrous droughts of the 1930's and demonstrated an urgent need for early development of irrigation in the area. The unit will stabilize, strengthen, and enlarge the cattle and range-land economy of a large tributary area.

There have been no changes in the basic conclusions that the unit is justified as a result of the completion of the Definite Plan Report approved in September 1952. The unit still has a favorable benefit-cost ratio, the water users can repay all operation, maintenance, and replacement costs, power can pay out in 50 years with interest, and the water users can pay for the distribution works (not to be construed as entire irrigation system) in 40 years. The irrigable land has been found to be better as a result of the detailed land-classification surveys. A program for control and use of irrigation water is not a major problem.

The total estimated cost of the Missouri-Souris division has been increased from $102,050,000 to $126,665,000 (estimated total obligations, $126,840,000). This cost increase is attributable to more accurate estimating data as the result of the recent completion of the definite plan report and the indexing of prior estimates to July 1952.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Medicine Lake Dam and Medicine Lake	$36,869,000	$213,749			$36,655,251
Missouri diversion dam—Little Porcupine site	9,988,000	410,466	$635,000	$3,150,000	5,792,534
Brockton Bench pumping plant	4,630,000	21,000	10,000	10,000	4,589,000
South side pumping plant	133,000	2,000	1,000		130,000
Missouri Canal	40,851,000	317,971	20,000	100,000	40,413,029
South Poplar Canal	293,000	2,000			291,000
South side canal	1,085,000	17,000	6,000	5,000	1,057,000
Farm unit development	300,030		10,000	10,000	280,000
Little Porcupine powerplant	8,246,000	247,270	505,000	2,100,000	5,393,730
Little Porcupine switchyard	426,000	12,421	21,000	140,000	252,579
South side substation for south side pumping plant	6,000	200			5,800
General property	1,884,000	5,000	40,000	5,000	1,834,000
Wolf Point municipal water supply	266,000	4,600			261,400
Poplar municipal water supply	23,000	400			22,600
Wolf Point-Poplar area	1,631,000	6,000	10,000	5,000	1,610,000
Chelsea Bench area (pumping)	2,380,000	8,000	7,000	57,000	2,308,000
Poplar River area (pumping)	2,282,000	3,000	3,000	3,000	2,273,000
Poplar-Brockton area	730,000	3,000			727,000
Brockton area (pumping)	13,407,000	40,000	60,000	30,000	13,277,000
N-Bar-N area	452,000	5,600	1,000		445,400
Wapiti area	411,000	1,100	1,000		408,900
Fort Charles area	372,000	3,000	1,000		368,000
Total cost	126,665,000	1,323,777	1,331,000	5,615,000	118,395,223
Construction:					
Construction facilities		28,215	265,000	122,000	−415,215
Stores		486			−486
Transfers, credits, and other expenditures	175,000	199,348	−26,942		2,594
Total expenditures	126,840,000	1,551,826	1,569,058	5,737,000	117,982,116
Unliquidated obligations		18,581	455,419	−474,000	
Total obligations	126,840,000	1,570,407	2,024,477	5,263,000	117,982,116
Method of financing:					
Allotment, fiscal year 1953			2,000,000		
Prior year balance available			24,477		
Allotment required				5,263,000	117,982,116

Mr. MARKWELL. That unit is now confined wholly to the State of Montana.

I have a statement on that.

Mr. JENSEN. Without objection it will be inserted in the record.

(The statement referred to is as follows:)

CONSTRUCTION AND REHABILITATION, MISSOURI RIVER BASIN PROJECT, MISSOURI DIVERSION UNIT, MONTANA

The Missouri diversion unit was authorized as part of the Missouri River Basin project by the Flood Control Acts of 1944 and 1946. In Senate Document 191, which set forth the basic plan for the project, the Missouri diversion unit was considered a part of the northern division of Missouri-Souris unit covering about 1,275,000 acres in western Montana and eastern North Dakota. As now proposed, irrigation development under the Missouri diversion unit will be be confined to approximately 100,000 acres of land lying entirely in Montana and provision will be made for diversion of water for the ultimate development of an additional 53,000 acres in Montana and 1,108,000 acres in North Dakota. Under this plan the unit will consist of the following principal features: The Missouri diversion dam on the Missouri River downstream from the Fort Peck Dam, the Little Porcupine powerplant with switchyard and transmission facilities, the Missouri Canal, and related irrigation works, including the Medicine Lake Dam. In addition to the benefits to be realized from the irrigation of the

agricultural lands, the current plan includes the 18,000-kilowatt capacity Little Porcupine powerplant capable of generating approximately 125,670,000 kilowatt-hours of electrical energy annually.

Funds were provided in the fiscal year 1953 Interior appropriation bill to initiate construction on this unit and in September 1952, the initial contract was awarded for stripping the foundation for the dike section of the diversion dam. By December 1952 this work was completed. Additional contracts in connection with the work on the dam have been awarded for furnishing the turbines and power transformers for the Little Porcupine plant. Contracts have also been awarded for construction of caretakers' and operators' houses and utilities to be used by the construction forces during construction of the dam and initial sections of the irrigation canals and later by operation and maintenance personnel.

In January 1953 specifications were issued for construction of the Missouri diversion dam and Little Porcupine power plant with the opening of bids scheduled for January 23. However, before the bids were opened a number of protests were received from landowners and civic interests in regard to the acquisition of lands which were then considered necessary for operation of the reservoir. Following a meeting with the parties concerned, a restudy of the problem was undertaken which lead to modification of the plan for the reservoir and the diversion dam as discussed further hereinafter. These changes have been agreed to by the majority of the landowners and allied interests, and the chief engineer has been instructed to proceed with revision of the designs and specifications for the dam and reservoir. This work will require about 90 days to complete. Accordingly specifications on the modified plan are now scheduled to be issued about May 1 with the opening of bids postponed to June 2.

In fiscal year 1954 funds will be required to continue work under contracts which will have been awarded by the end of fiscal year 1953 for the construction of the Missouri diversion dam, powerplant, and switchyard. In order to fulfill the Bureau's obligations in relation to the existing construction contracts, and to pursue an economical construction program, contracts will be awarded for the relocation of the Montana-Dakota Utilities Co. gas line, the protection of the United States Government railway, the installation of equipment at the powerplant, and the procurement of accessory electrical powerplant equipment Design work will be started on the first portion of the Missouri Canal and facilities for the Chelsea Bench irrigation area. Continuation of work as proposed for fiscal year 1954 is necessary to assure, by fiscal year 1956, the delivery of water to several irrigation areas totaling 7,200 acres and initial generation of electrical energy. This will be the first step in efforts to prevent repetition of conditions which prevailed during the disastrous droughts of 1930, and the dry seasons of 1949, 1950, and 1952, when it was clearly demonstrated that early development of irrigation in the area was urgently needed. Completion of this unit will contribute much toward the stabilization and strengthening of the economy of a large area in northeastern Montana and will have a beneficial effect in the adjacent area of northwestern North Dokota.

REVISED PLAN FOR DIVERSION DAM AND RESERVOIR

Following announcement of construction of the Missouri diversion dam and the lands that would have to be acquired for the reservoir, a large number of protests were heard from the landowners whose holdings were marked for acquisition and civic interests represented by the Valley County commissioners, the city of Glasgow, the Nashua soil-conservation district, and various service clubs, who were concerned over the potential loss of taxable lands and disruption of rural-trade areas. In response to these protests the Bureau of Reclamation stopped all land acquisition, postponed the opening of bids on the diversion dam and proceeded to restudy the plans for the dam and reservoir area.

Consideration was given to modifying the proposed reservoir operation plan so as to reduce: the amount of Missouri River bottom lands which would be inundated by flood flows originating above the dam, particularly on the Milk River arm of the reservoir, the amount of taxable land that would have to be acquired, and the rural areas affected. Based on a field examination of the situation and engineering calculations of the conditions which are likely to occur it was determined that if the operating surface of the reservoir could be maintained at elevation 2,032, except for unusual and infrequent floods, most of the local objections to the development could be met. In addition, establishing the normal operating surface of the reservoir at elevation 2,032 would: (1)

avoid the retirement from production of 7,600 acres of agricultural lands, about 3,700 of which are presently irrigated, (2) preserve the Indian irrigation project at about its present size, and (3) save about $500,000 in the cost of land acquisition.

The disadvantages of the modified plan are the increased cost of construction and loss of annual power revenues. To accommodate the diversion dam to the new reservoir operation plan it will be necessary to extensively redesign the structure to provide for seven 6- by 80-foot gates and lower the dam about 4 feet. The total increase in cost to cover the additional design and construction work involved is estimated to be $340,000. The power which can be generated under the modified plan will be reduced from an annual average of about 128,870,000 kilowatt-hours to about 125,670,000 kilowatt-hours or an average annual reduction of about 3,200,000 kilowatt-hours. This loss of nonfirm energy will result in a reduction in annual gross power revenues from about $478,000 to about $470,000; a reduction of about $8,000 or slightly less than 20 percent of the total.

The modified reservoir operation plan has been presented to the local people and appears to have received general and definite approval. It has the written endorsements of the Valley County commissioners, the city of Glasgow, the Nashua soil conservation district, various service clubs in Nashua and Frazer, the local school districts, and numerous other interested parties. Of approximately 40 landowners involved in the lands to be acquired for the reservoir, 22 favor the modified plan, 4 oppose any plan, and 14 have not been available for interview.

Since the modified plan for the reservoir is now acceptable to most of the parties of the area who had formerly raised objections to the development and since studies to date indicate that the additional cost of construction due to redesign of the dam plus the loss of power revenues will just about be offset by savings in the cost of the land to be acquired, it has been decided to go ahead with new design studies of the modified plan and redesign of the dam. Accordingly as stated, the chief engineer has been instructed to proceed with revision of the designs and specifications for the diversion dam so that, subject to approval of the modified plan, the contract may be awarded and construction started by the end of fiscal year 1953.

Mr. JENSEN. What will be the disposition of the power from the Little Porcupine power plant that will cost $8,246,000, and has construction on this plant been started?

Mr. LINEWEAVER. Construction has been started. It is my understanding that the power will be put in the Fort Peck power system.

Mr. JENSEN. This is a multipurpose project?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. I would like to have you try your best to justify this expenditure of $8,246,000 for the Little Porcupine powerplant.

Mr. LINEWEAVER. Very well. Shall we submit a statement for the record?

Mr. JENSEN. Yes.

(The statement referred to is as follows:)

REQUEST FOR FUNDS FOR LITTLE PORCUPINE POWERPLANT, MISSOURI DIVERSION UNIT

The request of $2,100,000 for the Little Pocupine powerplant is the amount needed in fiscal year 1954 to continue construction of the powerplant building, including turbines and generators and accessory electrical and mechanical equipment. Construction of this unit was started in fiscal year 1953, and power is scheduled to be available in December 1955. A contract for turbines has been awarded and bids have been received on the generators. Dam construction is now under way at the site.

This powerplant will have an installed capacity of 18,000 kilowatts and is estimated to produce 113 million kilowatt-hours annually of which 108 million kilowatt-hours will be firm power. The total estimated cost allocated to power is $12,546,000 including a portion of the cost of the diversion dam, resulting in an investment cost of approximately $700 per kilowatt of installed capacity. The annual power benefits are $708,000 and the overall benefit-cost ratio of

the unit is 1.7 to 1.0. It is estimated that the powerplant will earn a surplus in 50 years of $2,374,000 which is available to aid in payout of irrigation investment.

About 15 percent of the power will be required for irrigation pumping. There are 10 pumping plants required in the irrigation features of the unit. The output of this plant will be delivered into the Fort Peck power system. The power is urgently needed for pumping and to meet load growth in the area.

Mr. JENSEN. That diversion unit is now under construction, is it not?

Mr. MARKWELL. Yes. We have already done some foundation stripping, and we have awarded the contracts for the turbines, and bids have been received for the generators. Due to right-of-way difficulties in that part of the valley, which would be flooded by the reservoir, we have found it would be less expensive and certainly more agreeable to the local people to redesign the dam, increasing the width of the spillways, so that when big releases come down from Fort Peck, water would not be backed up and flood the flat plains.

Mr. JENSEN. I wish you would supply for the record a statement explaining the purpose of this unit and its importance.

Mr. LINEWEAVER. Yes, sir; and I would like to add something to Mr. Markwell's statement about the change in the reservoir area because I think you will hear a great deal about that when the Montana folks come in next week.

Mr. JENSEN. I am aware of that, and naturally we want to hear the folks from Montana. I do not know that they are going to have any complaints one way or the other, but I know they are greatly interested in this project, as well as the people in North Dakota. This project affects both States, does it not?

Mr. LINEWEAVER. As presently laid out, this Missouri diversion unit has been separated and is confined now wholly to Montana. The North Dakota end will be explained in connection with phase B but as a separate item because investigations showed the separation was more feasible.

PROGRESS ON MISSOURI-SOURIS DEVELOPMENT IN NORTH DAKOTA

Mr. JENSEN. Mr. Lineweaver, what progress is being made in connection with the Missouri-Souris development in North Dakota?

Mr. LINEWEAVER. Intensive investigation work on the Garrison diversion unit could be expedited with allocation of funds in addition to the $11,000 proposed in the January budget under phase C of the Missouri Basin project. We developed a sound plan to divert irrigation water from Garrison Dam to a million or more acres in central North Dakota. The Corps of Engineers which is building Garrison has indicated it will cooperate in providing pumping facilities to get water into the main canals from Garrison Reservoir.

I submit a news release by Regional Director Vernon that outlines the Garrison diversion as a substitue for the irrigation of the northwestern part of North Dakota by diversion from the Missouri River below Fort Peck and transfer of the water through long canals to the North Dakota area.

Mr. Vernon's description of the Garrison diversion is as follows:

BISMARCK, N. DAK., February 18, 1953.—"Another major milestone has been reached—investigations of the Missouri-Souris division reveal that diversion from Garrison Reservoir is the most economical way to supply water to central

and eastern North Dakota," Kenneth F. Vernon, Regional Director of the Bureau of Reclamation, announced today.

"This finding is based on more detailed investigation summarized in my report which was submitted to day to the Governor and the North Dakota State Water Conservation Commission for their information and comment in accord with procedures of coordination and cooperation existing between the State, Federal, and local agencies. After comments have been received, the report and letters of comment wil lbe submitted to the Commissioner of Reclamation with my recommendation that the findings govern all of our future investigations of the Missouri-Souris division," Regional Director Vernon said.

He reported that engineering studies show conclusively that Missouri River diversion for North Dakota is simpler, cheaper, and more economical in operating cost if water is diverted from Garrison Reservoir near Turtle Lake rather than from Montana as first proposed.

This announcement climaxes a series of important discoveries which investigations of the Missouri-Souris divisions of the Missouri River basin project have revealed.

Vernon showed the broad outline of a plan for possible development of surplus waters in the Missouri River in North Dakota. He explained a proposal for irrigating nearly a million acres of land east of the Missouri River with the possibility of a long-range plan for irrigating nearly 2 million acres of land. Included in the plan are provisions for supplying municipal water to about 40 North Dakota cities. It is also proposed that return flow water from irrigation be used to raise Devils Lake and dilute seriously polluted streams in the eastern part of the State.

"This plan will serve the same objectives as originally foreseen for the Missouri-Souris division," Vernon said. "It is, however, based on careful land classification and there is every reason to be confident that one of the greatest irrigation projects in the United States can be developed here in North Dakota."

Previously the Bureau had announced that nearly a million acres in the Crosby-Mohall unit was not suitable for irrigation because of impervious subsoils. Later investigation showed that substitute lands of good quality for irrigation are available at various locations in a broad belt extending from Westhope near the Canadian boundary past Oakes and the South Dakota boundary. Vernon explained that "because these new lands are further to the east and at lower elevations than those first proposed for irrigation, it became obvious that diversion from Garrison Reservoir had to be considered as an alternate to the long and expensive diversion system originating in Montana. Studies now show that Garrison diversion is the better plan for serving the new lands."

Garrison has been selected as the point of diversion for the North Dakota lands in the Missouri-Souris division of the authorized Missouri River Basin project because:

(1) Construction costs of the Garrison plan would be $134 million less than construction costs of the Fort Peck plan, based on serving 1,061,000 acres from the Garrison plan as compared with 1,095,000 acres from the Fort Peck plan.

(2) Annual operation and maintenance costs of the Garrison plan would be $700,000 less than for the Peck plan, which includes the differences in cost for operation and maintenance of the main irrigation and power facilities and the main pumping plants, without charge for energy imported or credit for surplus energy exported.

(3) About 100 million kilowatt-hours less of electric energy would be required annually to operate the main irrigation pumps in the Garrison plan than in the Fort Peck plan, which at 2½ mills per kilowatt-hour would be an additional $250,000 in favor of the Garrison plan.

(4) About 90 million kilowatt-hours more electric energy would be produced annually from the Garrison plan than by the Fort Peck plan, which at 2½ mills per kilowatt-hour, would be an additional $225,000 in favor of the Garrison plan.

(5) The average annual diversion rate of water required for the Garrison plan would be 500,000 acre-feet less than for the Fort Peck plan, thus enhancing further development in North Dakota and downstream.

(6) Only one-fourth as much main canal would be required in the Garrison plan as in the Fort Peck plan to reach the first large bodies of irrigable land in North Dakota.

(7) The Garrison plan would offer the most economical source of water for extension of irrigation into the Red River Valley of North Dakota at some time in the future when the desire and need compel such expansion.

(8) The Garrison plan would not impair present or future development in Montana.

The point of diversion on the Missouri River has been selected by a comparison of costs of the main supply works, and of operation and maintenance of the two routes. The Fort Peck route would divert water at the Missouri diversion dam to irrigate both Montana and North Dakota lands. The Garrison route would divert water from Garrison Reservoir to irrigate North Dakota lands. To make the comparison more realistic, costs for supplying water to most of the Montana lands have been added to the Garrison route costs. Since practically the same lands are involved in both diversion routes, similar costs—such as those for laterals, drains, farm development, and other common works—would cancel out and were omitted from the comparison. Thus the report compares costs of serving the same relative overall development by the route originally proposed and by diversion from Garrison, which is an evolvement from the original plan, resulting from the continuing investigations of the Missouri-Souris division.

The report shows conclusively that diversion to arable lands in North Dakota as established by land classification surveys should be from Garrison and not from below Fort Peck. It does not propose or intend to show whether such a diversion is economically or administratively practicable to make at this time since only part of the total costs were used in the comparisons. Practicability will be determined by findings to be summarized in a preliminary evaluation report on the Missouri-Souris division, currently under preparation by the Bureau of Reclamation in cooperation with local, State and other Federal agencies, District Manager Bruce Johnson said.

Congress approved, by the Flood Control Act of 1944, general plans for development of the Missouri River Basin as set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

The Department of the Interior, in its Senate Document 191, proposed numerous developments including the large Missouri-Souris division aggregating 1,403,500 acres in Montana and North Dakota. This is about one-fourth of the irrigation development proposed for the entire Missouri River Basin project. Other uses of water in the division included hydroelectric power development, restoration of Devils Lake municipal and industrial water supply pollution abatement, fish and wildlife conservation, flood control and allied uses. Water for this large division was to be diverted from the Missouri River in Montana as regulated by Fort Peck Reservoir constructed by the Corps of Engineers.

One million acres proposed for development were located in the Crosby-Mohall area of northwestern North Dakota, mainly in Divide, Burke, Renville, Ward, Bottineau, and McHenry Counties. The remaining 403,500 acres include 59,400 acres in the Glasgow Bench unit above Fort Peck Dam and 68,900 acres in the Missouri River pumping units below Fort Peck Dam, none of which are involved in this report; 166,600 acres in Montana, most of which is now to be served by the Missouri diversion unit already under construction by the Bureau of Reclamation; and 108,600 acres in the New Rockford, Jamestown and Oakes units of central North Dakota.

Land resource investigations made by the Bureau of Reclamation have since shown that most of the 1 million acres originally proposed for development in the Crosby-Mohall area are unsuitable for sustained irrigation development, principally because of the predominance of impervious soils deposited as glacial till during recent geological times.

However, additional land resources and engineering surveys have indicated that North Dakota still has about 1 million acres of land suitable for irrigation development in or near the areas first proposed. These surveys show that there are about 700,000 acres of arable land in Bottineau, Renville, McHenry, Ward, and Pierce Counties, most of which are suitable for sustained and profitable irrigation development. This land, located in the bed of glacial Lake Souris, overlaps and lies to the east of the original Crosby-Mohall area. Areas of arable land larger than those proposed in Senate Document 191 have been found in the Devils Lake, New Rockford, Jamestown and Oakes areas.

Very preliminary reconnaissance studies of three large delta areas in the western part of the Red River Valley of North Dakota have recently revealed that at some time in the future an additional 1 million acres of land might be irrigated. Costs for supplying water to these areas were not estimated, and consequently were not included in the comparison, District Manager Johnson said.

RAPID VALLEY UNIT, SOUTH DAKOTA

Mr. JENSEN. We turn now to Rapid Valley unit, South Dakota. We will insert in the record at this point page 100 of the special data requested of the Bureau and pages 539-542 of the justification.

(The page referred to is as follows:)

CONSTRUCTION

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$433,725	$1,097,102	$4,230,000
Unliquidated obligations	1,084	−1,084	
Total obligations	434,809	1,096,018	4,230,000

HISTORY OF PROJECT DEVELOPMENT

Location

Pennington County, S. Dak.

Purpose

Municipal water, irrigation, flood control, and recreation.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887), and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1937.
Advanced Planning, 1949.
Construction, 1952.
Date of functional completion of construction, fiscal year 1957.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1953, $1,000,000.

COSTS

Original estimated cost	$950,000
Unallocated	950,000
Present estimated cost	12,170,000
Allocation of cost:	
Irrigation	4,166,000
Flood control	4,500,000
Recreation	281,000
Municipal	3,223,000

REPAYMENT

Status of repayment contract negotiations

A water service contract has been executed with the city of Rapid City. Irrigation contract arrangements will not be undertaken until a decision is made on scheduling construction of specific irrigation works. A 40-year repayment contract with not to exceed a 10-year development period will be negotiated providing for repayment of distribution system costs assigned for repayment by irrigation. Additional construction costs will be returned by irrigation through the construction component in water service charges. The construction component in water service charges to be paid by Rapid City will return additional construction costs. Payment arrangements for the Rapid City Air Base water supply is also involved.

Repayment of costs allocated to irrigation

Water users	$232,000
MRBP pooled power revenues	3,934,000
Total	4,166,000

Repayment costs per acre

Federal investment per acre	$375
Water users	21
From power revenue	354
Annual water user charges:	
Construction	[1] 0.39
Operation and maintenance	.55
Total	.94

[1] This rate, which is 75 percent of repayment ability, will require additional 13-year water-service contract with $0.39 construction component following initial 40-year repayment period to return costs payable by water users.

Increased net income per acre resulting from project irrigation (payment capacity), $1.07.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full				2,200
Supplemental				8,900
Total				11,100

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$12,173,827
Total obligations to June 30, 1952	434,809
Allotment, fiscal year 1953	1,000,000
Prior year balance available	96,018
Total obligations, fiscal year 1953	1,096,018
Allotment, fiscal year 1954	4,230,000
Total obligations, fiscal year 1954	4,230,000
Balance to complete	6,413,000

JUSTIFICATION OF ESTIMATE

Location

The unit is located in east central Black Hills in Pennington County, S. Dak. It extends from Pactola Reservoir site, 15 miles west of Rapid City, S. D., to lands just below Farmingdale, S. Dak.

Description

The principal purpose of the unit is to furnish a full supply of water to Rapid City and to the Rapid City Air Base. In addition, it will provide a full water supply to 2,200 acres of new lands under the Iowa Canal extension, furnish a supplemental water supply to 8,900 acres for the presently irrigated lands of the Rapid Valley project, and provide flood protection to Rapid City. Facilities of the unit include Pactola Dam and Reservoir, the Iowa Canal and diversion works, and the Iowa Canal extension.

Repayment

Negotiations for a water-service repayment contract with the city of Rapid City for municipal water have been completed and the contract is scheduled to be executed early in calendar year 1953. Preliminary plans will be formulated for a water-service contract with the Rapid Valley Conservancy District during the budget year. No irrigation district has been formed for the new lands under the Iowa Canal, therefore, repayment negotiations have not been initiated.

Status

The definite plan report has been completed; geological investigations and construction materials investigations for the assembly of final design data for

the Pactola Dam and Reservoir are complete; surveys for the county road relocation and plans for relocation of United States Highway No. 85A are underway; and preliminary layout of Iowa Canal and laterals was completed during fiscal year 1952. The prime contract for construction of Pactola Dam was awarded in October 1953 and the major portion of the funds presently available for fiscal year 1953 will be required to finance this contract. In addition, the fiscal year 1953 program will include purchase of buildings located in the reservoir area, land acquisition, start of work on United States Highway No. 85A and access road, and award of contract for moving and erecting camp buildings.

Work proposed for fiscal year 1954

Construction work on the prime contract for construction of Pactola Dam will continue; purchase of land and rights including buildings and the ranger station in the reservoir area to be completed; contracts are to be awarded and construction initiated on relocation of county road, powerlines, telephone lines, and for clearing lands.

Justification

The Rapid City Air Force Base has not had, since its establishment in 1942, an adequate water supply. Anticipated peak demand during the coming year is more than double the available supply. Water is essential not only for domestic use at the base, but for photographic laboratory, the aqua system of storing high-octane gasoline, maintenance of giant B–36's and B–35D's, etc. At the present time the Air Force base is required to rely on a very unsatisfactory source from wells of an average depth of over 4,000 feet which yield highly mineralized water at excessive temperatures of from 92° to 121° F. The necessary cooling, the corrosion of pipes, and treatment required, present an expensive and continuing problem, such as to make wells an entirely unsatisfactory source of supply. Furthermore, Rapid City's municipal use, taxed existing facilities in the comparatively cool 1950 season.

Under the program presently contemplated for the Rapid Valley unit, an additional supply of water to relieve this critical situation will not be available until fiscal year 1956. It is, therefore, essential that adequate funds be made available to permit the prime contractor for the construction of Pactola Dam to proceed as rapidly as possible to prevent any undue delay in relieving this situation.

The total estimated cost has been increased from $8,948,000 to $12,170,000 (anticipated total obligations, $12,173,827). This increase is due primarily to changes in the design of Pactola Dam to provide additional reservoir capacity. It is also due to revisions in the estimate for Pactola Dam and Reservoir and the irrigation facilities to reflect more detail design data collected for the definite plan report and increases in the cost of labor and materials.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Pactola Dam and Reservoir	$10,644,000	$354,949	$989,713	$4,135,875	$5,163,463
Iowa Canal diversion dam	52,000				52,000
Canals	695,000				695,000
Laterals	194,000				194,000
Drains	128,000				128,000
Farm unit development	57,000			1,000	56,000
General property	400,000				400,000
Total cost	12,170,000	354,949	989,713	4,136,875	6,688,463
Construction facilities			195,084	91,500	−286,584
Transfers, credits and other expenditures	3,827	78,776	−87,695	1,625	11,121
Total expenditures	12,173,827	433,725	1,097,102	4,230,000	6,413,000
Unliquidated obligations		1,084	−1,084		
Total obligations	12,173,827	434,809	1,096,018	4,230,000	6,413,000
Method of financing:					
Allotment, fiscal year 1953			1,000,000		
Prior year balance available			96,018		
Allotments required				4,230,000	6,413,000

Mr. JENSEN. You are asking for $4,230,000 for 1954. This is a municipal water, irrigation, flood control, and recreational project. Mr. Markwell, will you make a statement on that?

Mr. MARKWELL. Yes, sir. I would like to submit this statement for the record.

Mr. JENSEN. Without objection, it will be inserted in the record at this point.

(The statement referred to is as follows:)

CONSTRUCTION AND REHABILITATION, RAPID VALLEY UNIT, MISSOURI RIVER BASIN PROJECT

In order to furnish a water supply to Rapid City and to Rapid City Air Force Base as soon as possible the prime contract for the construction of Pactola Dam was awarded in October 1952 and a contract for furnishing outlet gates for the dam was also awarded in October 1952. Most of the available funds for fiscal year 1953 will be required to cover the prime contract on which exceptional progress has been made to the extent of threatening the exhaustion of allocated funds. However, some funds will be used for the purchase of buildings located in the reservoir area, and for land acquisition.

Funds are required during fiscal year 1954 for the continuation of construction on the prime contract which will continue throughout the year. The purchase of land and rights, including buildings in the reservoir area, is to be completed as will the purchase and relocation of the ranger station. The relocation of U. S. Highway 85A will be accomplished by the Bureau of Public Roads. Specifications will be issued and contract awards made for the relocation of the county road, powerline and telephone line and clearing of lands. Work on farm unit development consisting of settlers' assistance will be carried on.

Unless construction of the dam and reservoir is continued as presently scheduled during fiscal year 1953 and fiscal year 1954, a serious situation can occur for existing water users and the important defense installation, Rapid City Air Base. While all functions of the reservoir were included in the present design for the dam in response to real and pressing needs, one of the most critical is that associated with providing water for the Rapid City Air Base which must have an adequate and satisfactory water supply. Rapid City with the concurrence of Rapid Valley Conservancy District may be able to furnish the air base with water from its present water sources until Pactola Reservoir is in operation. This is an interim and emergency course of action and can only be accomplished by depleting water supplies; it cannot be sustained safely beyond the time schedule to place Pactola Reservoir in operation.

Mr. MARKWELL. I think Mr. Lineweaver also has a statement on that.

Mr. LINEWEAVER. This is one of the projects I discussed with you where additional funds are needed to keep up the payments to the contractor, who has been moving ahead of schedule.

I would like to put a statement in the record on that requirement for additional funds.

Mr. JENSEN. Without objection it is so ordered.

(The statement referred to is as follows:)

CONSTRUCTION AND REHABILITATION

REQUIREMENT FOR ADDITIONAL FUNDS, FISCAL YEAR 1953

A recent analysis of construction progress and field conditions on the Rapid Valley unit, Missouri River Basin project, indicates that additional funds will be needed in fiscal year 1953 to finance an efficient program which will take advantage of the unusually good progress of the prime contractor in order to assure achievement of the benefits of the unit at the earliest practicable time. No change is proposed in the fiscal year 1954 appropriation request and the additional fund requirement in fiscal year 1953 is to be compensated for by reduced requirements in fiscal years 1955 and 1956. It should be noted that the re-

quested reprograming proposes no increase in the total cost of the work but only a shift between fiscal years.

The additional fiscal year 1953 funds are required to finance three specific activities. These are:

Pactola Dam and Reservoir (prime contract)	$231,982
Relocation of United States Highway 85–A	556,000
Land and rights	100,000
Total fiscal year 1953 increase	887,982

With funds available in fiscal year 1953 it was possible to reserve for the prime contractor only $518,018 although his proposed schedule indicated fiscal year earnings of $800,000. It was expected that earnings under the contract for construction of the dam would be relatively small until spring construction season. The unusually mild winter, however, permitted earlier starting than anticipated and nearly $100,000 has already been earned. The contractor started operations on November 25, 1952, and during the month of December operations were confined to clearing and stripping. During January 1953, the contractor worked on all dikes, started cutoff trenches, stripping the dam site area and cleared the overburden from the tunnel excavation and placing zone 2 material for the embankment. With this background, it is now estimated that normal earnings under this contract will be approximately $750,000.

The goal for initial storage of water in Pactola Reservoir is presently set for the spring of calendar year 1955. In order that this may be accomplished, traffic over United States Highway 85–A, which is now situated in the reservoir area, must be routed over the relocated highway and the dam. The present status of construction indicates the dam embankment will be sufficiently completed to accommodate the highway traffic by December 1954.

Relocation of United States Highway 85–A, which is to be accomplished by Bureau of Public Roads, cannot be completed by December of 1954 unless contracts are let in the spring or early summer of the current calendar year.

Existing Bureau of Public Roads' regulations prohibit them from entering into any construction contracts unless funds are available for the total cost in advance of issuance of invitation for bids. Therefore, in order to insure completion of the highway with the dam embankment simultaneously in December 1954, it is necessary that the portion of the total cost of the highway relocation which is to be borne by the Bureau of Reclamation be advanced to the Bureau of Public Roads so invitations may be issued for the relocation at an early date.

The additional funds are required to permit the land procurement program to proceed under conditions most economical to the Government, and make possible the coordination of land acquisition with the construction program in order that progress can be made in an orderly manner toward the goal of initial water in the spring of 1955.

The preceding paragraphs show the necessity for the requested increase in fiscal year 1953. In order to proceed with an efficient and orderly program which, in view of the unexpected construction progress, will assure the earliest possible achievement of the project goals, $880,000 in addition to the present fiscal year 1953 allotment should be made available for construction of the Rapid Valley unit.

Mr. LINEWEAVER. I would also like to put a statement in the record on the water supply situation with respect to Rapid City and the Rapid City Air Force Base, together with some correspondence with Senator Case and Senator Mundt. Congressman Berry has also been very much interested in this matter.

Mr. JENSEN. Without objection it is so ordered.

(The papers referred to are as follows:)

WATER SUPPLY FOR CITY OF RAPID CITY AND RAPID CITY AIR FORCE BASE, MISSOURI RIVER BASIN PROJECT, RAPID VALLEY UNIT

The Interior Department Appropriation Act of 1953 appropriated funds for initiation of construction of Pactola Reservoir near Rapid City, S. Dak. This reservoir will provide a supplemental water supply for Rapid City, and in turn for the adjacent Rapid City Air Force Base. Water for future irrigation in the area is also provided for. The water-supply problems of the air base were im-

portant reasons for expediting construction of Pactola Reservoir. The existing well-water supply has proved to be inadequate in quantity, quality, and temperature.

The Bureau of Reclamation is pleased to report that a water-service contract was executed on behalf of Rapid City on October 20, 1952; and construction of Pactola Reservoir is underway. In order to meet the urgent military requirements for water for the air base during Pactola Reservoir construction, Rapid City has agreed to furnish water to the air base on a temporary basis through reduced municipal consumption and by depletion of local storage supplies. The Department of the Air Force is to construct a pipeline from the air base to the connection with the water-distribution system of Rapid City.

In general terms, the contract with Rapid City involves payments by the city for only the supply to be used for municipal purposes. The city has agreed to deliver Pactola Reservoir water, after treatment, through its municipal system to the airbase connection. Municipal charges to the air base for up to 1,810 acre-feet of water from Pactola Reservoir are to be restricted to costs of treating and carrying the water through municipal facilities.

There remains for disposition the question of costs of Pactola Reservoir assignable to the airbase water supply, and not assigned for reimbursement through the water-service contract with Rapid City. Of the total cost of the Rapid Valley unit, which includes Pactola Reservoir, $2,785,000 has been assigned for reimbursement by municipal and military water users. Of this amount, $1 million is attributable to the water supply to be furnished the Rapid City Airbase. Costs attributable to the airbase supply could be recouped either by transfer of funds from the Department of the Air Force as payment for its annual 1,810 acre-feet of water, or by congressional action declaring that portion of the municipal water-supply allocation nonreimbursable for defense purposes. In either event, Federal funds only are involved.

There are attached copies of correspondence with Senator Case, Senator Mundt, and the Secretary of the Department of the Air Force relating to reimbursement for the Rapid City Airbase water supply. Assistant Air Force Secretary Huggins' letter of February 13, 1953, indicates willingness to support a request that Congress declare nonreimbursable that portion of Pactola Reservoir construction cost assignable to the Rapid City Air Base water supply.

Attachment.

UNITED STATES DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington, D. C., March 9, 1953.

Hon. FRANCIS CASE,
United States Senate, Washington 25, D. C.

MY DEAR SENATOR CASE: On January 7, 1953, we sent you a letter regarding the financing of Rapid City Air Base water supplies to be furnished from Pactola Reservoir, Missouri River Basin project. For convenience, a copy of the January 7 letter is enclosed.

We are also enclosing copies of our letter to former Air Force Secretary Finletter. The reply of February 13 was signed by Assistant Secretary Huggins. The Air Force now indicates willingness to support a request that Congress declare nonreimbursable that part of Pactola Reservoir construction costs assignable to the air-base water supply.

We would sincerely appreciate your continued interest in resolving this matter. Copies of this correspondence are also being sent to Senator Mundt.

Sincerely yours,

G. W. LINEWEAVER,
Assistant Commissioner.

UNITED STATES DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington 25, D. C., March 9, 1953.

Hon. KARL E. MUNDT,
United States Senate,
Washington 25, D. C.

MY DEAR SENATOR MUNDT: You will recall that the city of Rapid City, S. Dak., recently executed a water service contract with the Government for a supplemental municipal water supply from Pactola Reservoir, Missouri River Basin project. This reservoir is 1 of the 10 new construction starts for which Congress appropriated funds for fiscal year 1953.

Procedures for financial participation on behalf of the Rapid City Air Force Base are for future determination. Therefore, in order to bring you up to date, we are enclosing copies of correspondence with the Department of the Air Force and Senator Case. Under Secretary Northrop's letters of January 7 to Senator Case and Air Force Secretary Finletter give the background, facts, and alternative for financing costs for Pactola Reservoir assignable to the Rapid City Air Base water supply. Assistant Air Force Secretary Huggins' reply of February 13 indicates willingness to support a request that Congress declare nonreimbursable that portion of Pactola Reservoir construction cost assignable to the Rapid City Air Base water supply.

Your continued interest in the resolution of the method of financial participation on behalf of the air base water supply would be appreciated.

Sincerely yours,

G. W. LINEWEAVER,
Assistant Commissioner.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington 25, D. C., January 7, 1953.

Hon. FRANCIS CASE,
United States Senate,
Washington 25, D. C.

MY DEAR SENATOR CASE: I am pleased to advise you that the long-term water service contract with the city of Rapid City, S. Dak., providing for a supplemental water supply from Pactola Reservoir (Missouri River Basin project) has been executed on behalf of the city and on behalf of the United States. Water deliveries under this contract, upon completion of Pactola Reservoir, will assure the Rapid City area an ample municipal and industrial water supply for many years.

As you have been informed on several occasions, an important feature of this contract is that it makes available quantities of water which can be furnished by the city to the adjacent Rapid City Air Force Base. It is contemplated that this water will be furnished by the city to the airbase under charges limited to the city's specific cost of conveyance and treatment in furnishing the air base water supply at the intake of the proposed air base water facilities. The city will not make payments to the United States for the quantities of water furnished by the city to the air base from Pactola Reservoir. In conformity with discussions with you, the city officials and representatives of the Department of the Air Force, particularly the Strategic Air Command at Omaha and the Rapid City Air Base Command, the Pactola Reservoir cost assignable to the air base water supply in the amount of $1 million will be recovered either by transfer of funds from the Department of the Air Force as payment of construction charges of Pactola Reservoir for service of up to 1,810 acre-feet annually, or by congressional action declaring that portion of the municipal water allocation nonreimbursable by Reclamation water users.

In view of your excellent efforts in working with this reimbursement arrangement, and the probability that you will undertake necessary actions in the coming Congress to determine final reimbursement arrangements by reason of the water to be supplied from Pactola Reservoir to the Rapid City Air Force Base, we are also sending a letter to the Department of the Air Force to advise them of the execution of the Rapid City long-term service contract and of your interest in this matter.

The Bureau of Reclamation will be pleased to furnish you with such additional information as may be necessary in concluding fiscal arrangements for the air base water supply to be furnished from Pactola Reservoir.

Sincerely yours,

VERNON D. NORTHROP,
Under Secretary of the Interior.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington 25, D. C., January 7, 1953.

Hon THOMAS K. FINLETTER,
Secretary of the Air Force,
Department of Defense, Washington 25, D. C.

MY DEAR MR. SECRETARY: During the past 2 years our 2 departments have been keenly interested in the problem of providing a supplemental water supply to the Rapid City Air Force Base, S. Dak., in connection with the existing water supplies of the city of Rapid City and supplies from the proposed Pactola Reservoir now being constructed as a part of the Missouri River Basin project. These informal discussions included conferences with Mr. John E. Koruzo, chief of sanitary facilities, of your Washington staff, and Col. S. L. Ely, of the Strategic Air Command.

I am pleased to advise you that we have now executed a long-term water-service contract with the city of Rapid City whereby supplemental water will be furnished to the city for municipal purposes, and additional water will be available for the city to convey through its facilities to the proposed intake of the Rapid City Airbase supply pipeline planned for construction by your Department in the near future. The contractual arrangements were reviewed with representatives of the Strategic Air Command so that they would be advised that Pactola Reservoir would provide water for the airbase and that the city would agree to convey the water to the airbase pipeline intake. The city of Rapid City agreed to furnish up to 1,810 acre-feet of water annually to the airbase and to limit the city's charges to the airbase to the conveyance and treatment cost to be incurred by the city in furnishing water to the airbase. Rapid City will not pay, however, for the quantities of water obtained from Pactola Reservoir and furnished to the Rapid City Airbase.

The cost of Pactola Reservoir in the amount of $1 million assignable to the airbase water supply, is a matter separate and apart from payments to be made to the United States by the city of Rapid City. The proposal informally discussed with the Strategic Air Command is that the allocation of costs in the amount of $1 million by reason of the water supply to be furnished the airbase would be recovered either by transfer of funds from the Department of the Air Force as payment of construction costs assignable to its annual water supply up to 1,810 acre-feet, or by congressional action declaring that portion of the municipal water construction allocation nonreimbursable for defense purposes.

Senator Case, of South Dakota, has long been interested in this water-supply problem and is aware of the arrangements discussed above.

When the time comes for consideration of these proposals by the coming session of Congress, we trust that the Department of the Air Force will be prepared to cooperate with Senator Case and the Department of the Interior in finalizing the payment arrangements for Pactola Reservoir water to be furnished the Rapid City Airbase. Completion of this reservoir will not only stabilize the water supply of the city of Rapid City, but should also resolve the extremely critical water-supply problems that have been faced by the Rapid City Airbase Command.

Sincerely yours,

VERNON D. NORTHROP,
Under Secretary of the Interior

DEPARTMENT OF THE AIR FORCE,
Washington, February 13, 1953.

Hon. VERNON D. NORTHROP,
Under Secretary of the Interior, Department of the Interior.

DEAR MR. NORTHROP: I am in receipt of your letter of January 7, 1953, requesting Air Force support of the Department of the Interior in its proposal to complete the construction of Pactola Reservoir as a part of the Missouri River Basin project.

Based upon repeated assurances from the city of Rapid City that it could supply all reasonable water requirements of Rapid City Air Force Base, the Air Force decided to abandon its reliance upon a ground-water supply from on-base wells and enter into an agreement with the city for water service. Accordingly,

plans for the construction of a water treatment plant for the base were canceled in favor of constructing a pipeline from the base to a point where the city would deliver treated water to the air base.

Although the initial proposal from the city of Rapid City was made more than 2 years ago, the Air Force was reluctant to change its plans until the city was in a position to assure the air base a dependable supply at reasonable rates. In giving these assurances last summer, the city of Rapid City stressed that its present resources were adequate to meet base water requirements for at least 5 years and that at the expiration of this period the city would be in a position to supplement its present resources with water from Pactola Reservoir. Under these conditions, the Air Force is willing to abandon its unreliable well supply and request congressional approval to construct a pipeline and pumping station facilities for obtaining water from Rapid City. Air Force proposals to this effect are included in the Fscal Year 1954 Public Work Program for Rapid City Air Force Base.

The Air Force realizes that certain contractual arrangements will be necessary between the Department of the Interior and the city for the furnishing of water to the city from Pactola Reservoir if he city deems this necessary for its own requirements and to meet its assurances to the Air Force. However, the Air Force is basically interested in these agreements only to the extent that sufficient water can be made available by the city to meet Rapid City Air Force Base water requirements and considers that such arrangements are mainly a matter between the city and your Department.

Under these circumstances, the Air Force is not in a position to obtain from Congress the sum of $1 million and contribute it to the Department of the Interior as its share of the cost of Pactola Reservoir. However, the Air Force does confirm its requirements for a long term dependable supply of water for present and future needs of Rapid City Air Force Base and agrees that Congress should consider this requirement within the justification for the Pactola Reservoir project. During congressional hearings, you may rest assured that the Department of the Air Force will support the Department of the Interior to the extent of reconfirming its needs for a dependable source of water supply within the terms of the proposed contract with the city of Rapid City and that to whatever extent the Pactola Reservoir will constitute a basic supply source for this contract, the Air Force will support a request that Congress declare this portion of the construction cost as nonreimbursable because of military needs in the Rapid City area.

Sincerely,

E. V. HUGGINS,
Assistant Secretary of the Air Force.

SHADEHILL UNIT, SOUTH DAKOTA

Mr. JENSEN. We will turn now to Shadehill unit, South Dakota. We will insert in the record at this point pages 101 and 102 of the special data requested of the Bureau and pages 544 through 547 of the justification.

(The pages referred to are as follows:)

CONSTRUCTION AND OPERATION AND MAINTENANCE, MISSOURI RIVER BASIN PROJECT, SHADEHILL UNIT, SOUTH DAKOTA

Construction

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$7,338,844	$115,127	$20,000
Unliquidated obligations	72,122	−72,122	
Total obligations	7,410,966	43,005	20,000

Operation and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures		$5,100	$6,000
Total obligations		5,100	6,000
Appropriation or estimate		[1] 5,100	6,000

[1] Appropriated under construction and rehabilitation for Missouri River Basin phase E but shown in United States budget, 1954, as a comparative transfer to operation and maintenance.

HISTORY OF PROJECT DEVELOPMENT

Location

Northwestern South Dakota in Perkins and Carson Counties.

Purpose

Irrigation, flood control, silt retention, municipal water, fish and wildlife, and recreation.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887) and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1939.
Advanced planning, 1947.
Construction, 1949.

Date of functional completion of construction: Dam and reservoir, fiscal year 1952; municipal water facilities, fiscal year 1956; irrigation facilities indefinitely deferred.

Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1948, $771,344.

Costs

Original estimated cost	$2,327,000
Allocation of cost: Unallocated	2,327,000
Present estimated cost	10,996,000
Allocation of cost:	
Irrigation	8,373,000
Flood control	2,069,000
Fish and wildlife	26,000
Recreation	22,000
Municipal	506,000

REPAYMENT

Status of repayment contract negotiations

Irrigation contract negotiations will not be initiated until a determination has been made on suitability of water for irrigation. Water service contract negotiations will be required with the city of Lemmon, S. Dak.

Amount to be repaid and repayment period

If irrigation proves practicable, a 40-year repayment contract with not to exceed a 10-year development period will be negotiated providing for the repayment of distribution system costs assigned for repayment by irrigation. Additional construction costs will be returned by irrigation through the construction component in water service charges. Similarly, municipal water service charges will return costs assigned for repayment from that source.

Repayment of costs allocated to irrigation

Water users	$784,000
Missouri River Basin project pooled power revenues	7,589,000
Total	8,373,000

Repayment cost per acre

Federal investment per acre	$698
Water users	65
From power revenue	633
Annual water user charges:	
Construction	[1] 1.22
O & M	3.20
Total	4.42

[1] This rate of payment, which is 75 percent of ability to pay, will require 13-year water service contract with construction component of $1.22 per acre following initial 40-year repayment period to pay costs payable by water users.

Increased net income per acre resulting from project irrigation (payment capacity), $4.83.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full				12,000
Supplemental				
Total				12,000

Personnel

Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954: Included in consolidated statement, Missouri River Basin project, operation and maintenance.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$11,445,000
Total obligations to June 30, 1952	7,410,966
Prior year balance available	43,005
Total obligations, fiscal year 1953	43,005
Allotment, fiscal year 1954	20,000
Total obligations, fiscal year 1954	20,000
Balance to complete	3,971,029

JUSTIFICATION OF ESTIMATE

Location

The Shadehill unit is located in northwestern South Dakota in Perkins and Corson Counties. The unit works will extend from the Shadehill Dam and Reservoir, located at the confluence of the North and South Forks of the Grand River, to a location approximately 30 miles downstream.

Description

This multipurpose project is planned to provide water for the irrigation of 12,000 acres of irrigable land, flood protection and silt control for the Grand River, and a source of municipal water for the city of Lemmon, S. Dak. Facilities include the Shadehill Dam and Reservoir, canals, laterals, drains, pumping plants with required distribution lines; a development farm, and facilities to provide municipal water for the city of Lemmon, S. Dak.

Repayment

Repayment and allocation studies will await the analysis of results from development farm studies concerning the suitability of Shadehill Reservoir water for irrigation. The Lemmon, S. Dak. municipal water definite plan report is scheduled for completion December 1953. A water service contract with the city of Lemmon will be under negotiation in fiscal year 1954.

Status

Construction of Shadehill Dam, initiated in April of 1949, is now essentially complete. As of June 1953 construction of the development farm will be completed. Riprap and other protective measures at spillway basin outlet, and in the spillway channel will be completed. Installation of electrical facilities at the dam will be complete; as will the remaining seeding of borrow areas and construction of a spillway fence. Preliminary plans and estimates have been compiled for the proposed Lemmon water supply. That portion of the construction facilities not needed for the second state of construction for Shadehill unit will be disposed of by the end of fiscal year 1953.

Work proposed, fiscal year 1954

Minor work will be continued on replacements of the wildlife habitat areas. Operation and maintenance activities will continue at the remaining portion of the construction camp.

Justification

The Shadehill unit is located in an area with an average annual rainfall over a 38-year period of 15.1 inches. This is about 5 inches below the minimum average required for dependable agriculture. Range livestock and dryland grain farming are the basis for the economic stability of the area. More than half of the tilled area is devoted to grain crops, principally wheat. During the years of above-average rainfall the crop production is fair to good; and during the years of below-average rainfall the crop production ranges from poor to complete failure. The estimated average yield of wheat for the period from 1926 to 1946 was only 7.6 bushels per acre. The shortage of water in the area is the combined result of low and erratic annual precipitation, high velocity winds and associated high evaporation rates, rapid thaws and excessive runoff of snow melt and the flash floods and erratic water flow characteristic of the Grand River. The Shadehill unit, designed for the storage of water and its controlled distribution to the irrigable land, will stabilize the agriculture of a good portion of the Grand River Valley. With adequate water for crop production assured, this area can be expected to establish a firm economy based on the production of grain and livestock. The unit will also provide an ample supply of water to the city of Lemmon, flood protection for the Grand River Valley, and reduce flood water in the Missouri River.

The total estimated cost of the unit has increased from $10,411,000 to $10,996,000 (anticipated total obligations, $11,445,000) due to addition of protective work for stilling basin, distribution line and substation, additional recreational facilities and indexing estimated cost of future constructure work.

Schedule of construction program fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Shadehill Dam and Reservoir	$6,981,000	$6,800,303	$176,697	$4,000	
Pumping plants, irrigation	424,000				$424,000
Pumping plants, municipal water, Lemmon, S. Dak	490,000	10,866			479,134
Canals	1,614,000	2,235	5,000	5,000	1,601,765
Laterals	552,000				552,000
Drains	463,000				463,000
Farm unit development	169,000	53,656	15,886	9,000	90,458
Distribution lines and substations	83,000				83,000
General property	220,000	49,634	30,427	2,000	137,939
Total cost	10,996,000	6,916,694	228,010	20,000	3,831,296
Construction facilities		122,144	−119,050	−350	−2,744
Operation and maintenance during construction	7,207	7,207			
Transfers, credits, and other expenditures	441,793	292,799	6,167	350	142,477
Total expenditures	11,445,000	7,338,844	115,127	20,000	3,971,029
Unliquidated obligations		72,122	−72,122		
Total obligations	11,445,000	7,410,966	43,005	20,000	3,971,029
Method of financing:					
Prior year balance available			43,005		
Allotments required				20,000	3,971,000

Mr. JENSEN. You are asking for $20,000. What do you need that $20,000 for?

Mr. MARKWELL. Principally for farm unit development and for a little work on wildlife habitat. I believe there are 13 little areas in there. And also for continued work on the Government camp. You will recall that the principal purpose of this dam when it was started was to control floods, and it has functioned very well.

Mr. JENSEN. Is that to comply with our obligations which we have to the Fish and Wildlife?

Mr. EATON. Yes. We have an agreement with the State fish and game department under which it will, at its own expense, administer and operate the facilities if we get this initial construction completed.

Mr. JENSEN. And the Federal Government is obligated to do that under the provisions of the contract with the people in that area?

Mr. EATON. Yes, and by the provisions of Public Law 732, 79th Congress, 2d session.

Mr. MARKWELL. I would like to put a statement in the record on the Shadehill unit.

Mr. JENSEN. Without objection it is so ordered.

(The statement referred to is as follows:)

CONSTRUCTION AND REHABILITATION, SHADEHILL UNIT, MISSOURI RIVER BASIN PROJECT

Shadehill unit was included as a multipurpose unit of the Missouri River Basin project in Senate Document 191 but construction was initiated in 1949 with emphasis only on the flood control service it would render. As a result of further investigations it has been disclosed that the quality of water may be questionable for irrigation purposes and the irrigation development phase of the unit has consequently been deferred. Shadehill Dam is now essentially complete with the prime contract having been completed in August 1951. The only construction contract now in force is that for riprap protection of the channel at the outlet of the service spillway. Work to be done during the remainder of fiscal year 1953 consists of the completion of land purchases for the dam and reservoir, riprap for protective works, installation of permanent electrical facilities, and additional seeding of borrow areas, all in connection with the dam and reservoir; and completion of the supply system, fencing, operation and maintenance of development farm; and the continuation of the work on 13 wildlife habitat sites.

Funds for fiscal year 1954 are required for the installation of reservoir protective facilities and for the development farm operations which are handled by capable personnel employed by the South Dakota State College. Studies are to continue in connection with the development farm to determine what effect the water in Shadehill Reserrvoir will have on the soil. The wildlife habitat program will continue and will consist of replanting of trees where necessary, cultivating, insect control, and fence maintenance.

Mr. LINEWEAVER. I have a statement on operation and maintenance for the record.

Mr. JENSEN. Without objection it will be inserted in the record at this point.

(The statement referred to is as follows:)

OPERATION AND MAINTENANCE, MISSOURI RIVER BASIN PROJECT, SHADEHILL UNIT, GRAND DIVISION, SOUTH DAKOTA

Shadehill Dam is located at the junction of the north and south forks of the Grand River about 15 miles south of Lemmon, S. Dak.

The primary purposes of the unit are the impoundment of water for irrigation and the provision of flood and silt control for the Grand River. The Standing Rock Indian Reservation will derive general benefits from the project. Feasi-

bility studies are in progress to determine the benefits involved in using the water for municipal purposes in Lemmon, S. Dak. Additional benefits result from fish and wildlife conservation and recreation use of the reservoir.

A total nonreimbursable appropriation of $6,000 is requested for operation and maintenance of the Shadehill Dam and Reservoir during fiscal year 1954. This amount will be apportioned as follows: Flood control, $4,820; fish and wildlife, $1,100; recreation, $80.

ST. FRANCIS UNIT, COLORADO AND KANSAS

Mr. JENSEN. The next item is St. Francis unit, Colorado and Kansas.

We will insert in the record at this point pages 103 and 104 of the special data requested of the Bureau, and pages 549–552 of the justification.

(The pages referred to are as follows:)

CONSTRUCTION AND OPERATION AND MAINTENANCE, MISSOURI RIVER BASIN PROJECT, ST. FRANCIS UNIT, COLORADO-KANSAS

Construction

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$13,259,904	$83,315	$35,000
Unliquidated obligations	1,859	−1,859	
Total obligations	13,261,763	81,456	35,000

Operations and maintenance

	Actual, 1952	Estimated, 1953	Estimated, 1954
Expenditures		$14,247	$13,209
Total obligations		14,247	13,209
Appropriation or estimate		[1] 14,247	13,209

[1] Appropriated under construction and rehabilitation for Missouri River Basin, Phase E, but shown in United States Budget, 1954, as a comparative transfer to Operation and maintenance.

HISTORY OF PROJECT DEVELOPMENT

Location

Yuma County in eastern Colorado and Cheyenne County, Kans.

Purpose

Irrigation flood control, fish and wildlife, and recreation.

Authorization

Flood Control Act of December 22, 1944, (58 Stat. 887) and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date

Planning, 1939.
Advanced planning, 1948.
Construction, 1948.
Date of functional completion of construction, fiscal year 1958.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1948, $800,000.

Costs

Original estimated cost	$13,311,600
Allocation of cost, unallocated	13,311,600
Present estimated cost	15,248,000
Allocation of cost:	
Irrigation	3,397,000
Flood control	11,709,000
Fish and wildlife	27,000
Recreation	115,000

REPAYMENT

Status of repayment contract negotiations

A water-users organization must be established before contract negotiations can be commenced.

Amount to be repaid and repayment period

A 40-year repayment contract with not to exceed a 10-year development period will be negotiated providing for the repayment of distribution system costs assigned for repayment by irrigation. Additional construction costs will be returned by irrigation through the construction component in water service charges.

Repayment of costs allocated to irrigation

Water users	$544,000
Missouri River Basin pooled power revenues	2,853,000
Total	3,397,000

Repayment costs per acre

Federal investment per acre	$521.00
Water users	83.00
From power revenue	438.00
Annual water-user charges:	
Construction	[1] 1.57
Operation and maintenance	4.09
Total	5.66

Increased net income per acre resulting from project irrigation (payment capacity), $6.18.

[1] This rate, which is 75 percent of ability to pay, would require water-service contract with $1.57 construction component following initial 40-year repayment period and running for 13 years to return total cost payable by water users.

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres):				
Full				6,000
Supplemental				520
Total				6,520

Personnel

Number of people on rolls as of June 30, 1952, and positions budgeted in 1953 and 1954: Included in consolidated statement, Missouri River Basin project, operation and maintenance.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$15,261,797
Total obligations to June 30, 1952	13,261,763
Prior year balance available	81,456
Total obligations, fiscal year 1953	81,456
Allotment, fiscal year, 1954	35,000
Total obligations, fiscal year 1954	35,000
Balance to complete	1,883,578

JUSTIFICATION OF ESTIMATE

Location

The unit is located in eastern Colorado and northwestern Kansas, Yuma County, Colo., and Cheyenne County, Kans. Project lands lie on both sides of South Fork, Republican River, extending from Bonny Dam to a point west of St. Francis, Kans.

Description

Major functions to be performed by the unit are flood control and irrigation. Facilities include Bonny Dam and Reservoir, St. Francis Canal and laterals, and the Hale Canal. Bonny Dam and Reservoir are located in Yuma County, Colo., 27 miles west of St. Francis, Kans. The reservoir will control flood runoff from the area which was the principal contributor to the disastrous flood on the Republican River in 1935. The reservoir will provide a dependable water supply for irrigation of 6,520 acres of land in Colorado and Kansas and will provide recreational opportunities to the inhabitants of southwestern Nebraska, northwestern Kansas, and eastern Colorado.

Repayment

No irrigation district has been organized, consequently repayment contract negotiations have not been initiated. Funds were made available for initiation of construction of the dam and reservoir by the special flood control appropriation of fiscal year 1948. Construction of irrigation features will be initiated subsequent to completion of a definite plan report scheduled for December 1953 and execution of a repayment contract projected for September 1955.

Status

Construction began on Bonny Dam in December 1948. Closure of the dam was made in July 1950, and the structure was essentially complete by the following spring. As of June 30, 1953, all work on the dam will be completed. Construction of irrigation facilities will not have been undertaken, but the major part of the field work required for development of a definite plan report will have been completed.

Work proposed, fiscal year 1954

Program for fiscal year 1954 provides for completion of the definite plan report and initiation of design data collection for the irrigation facilities.

Justification

Bonny Reservoir is now storing irrigation water. This water can be put to its intended use on project lands only upon construction of the irrigation distribution system. The program is designed to achieve this end as soon as possible consistent with the time that must consumed in final plans, organization of an irrigation district, and consummation of a repayment contract. Funds requested for fiscal year 1954 will provide for the necessary remaining studies for presentation of plan leading to execution of a repayment contract and initiation of construction of the irrigation facilities. No use of critical materials is involved.

The total estimated cost of this unit has been increased from $15,013,000 to $15,248,000 (anticipated total obligations $15,261,797). This adjustment in the cost estimate results from the application of cost experience on like facilities and current cost indexes.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Bonneville Dam and Reservoir	$13,105,000	$13,100,180	$9,820		−$5,000
St. Francis Canal	1,404,000	561		$15,000	1,388,439
Hale Canal (rehabilitation)	94,000	91			93,909
St. Francis laterals	220,000	54		5,000	214,946
St. Francis drains	135,000	38			134,962
Hale drains	38,000	14			37,986
Farm unit development	15,000			1,000	14,000
General property	95,000	37,950	15,000	2,000	40,050
Bonneville recreation development	142,000	43,434	1,000		97,566
Total cost	15,248,000	13,182,322	25,820	23,000	2,016,858
Project investigations			57,495	12,000	−69,495
Operation and maintenance during construction	13,797	13,797			
Transfers, credits and other expenditures		63,785			−63,785
Total expenditures	15,261,797	13,259,904	83,315	35,000	1,883,578
Unliquidated obligations		1,859	−1,859		
Total obligations	15,261,797	13,261,763	81,456	35,000	1,883,578
Method of financing:					
Prior year balance available			81,456		
Allotments required				35,000	1,883,600

Mr. JENSEN. You are asking for $35,000 for construction.

Mr. MARKWELL. I have a statement on that, Mr. Chairman.

Mr. JENSEN. Without objection it will be inserted in the record at this point.

(The statement above referred to is as follows:)

CONSTRUCTION AND REHABILITATION, MISSOURI RIVER BASIN PROJECT ST. FRANCIS UNIT, COLORADO AND KANSAS

Flood control and irrigation are the major functions to be performed by the Bonny Dam and Reservoir, St. Francis Canal and laterals, and the Hale Canal of this unit. Construction of the dam and reservoir was initiated from funds made available by the special flood control appropriation of fiscal year 1948. This feature is essentially complete and will control runoff from the area that contributed most to the Republican River flood of 1935. Construction of the irrigation facilities to provide a dependable water supply to 6,520 acres of land in eastern Colorado and northwestern Kansas will be initiated subsequent to execution of a repayment contract scheduled for September 1955. By June 30, 1953 the major part of the field work required for development of the irrigation definite plan report will be accomplished.

The $35,000 requested for fiscal year 1954 are for initiating collection of irrigation facilities design data and for completion of the definite plan report and the communication system.

Mr. MARKWELL. That $35,000 is for a little drainage work at Bonny Dam, and we are negotiating a repayment contract and are completing the definite plan report.

(The statement referred to is as follows:)

MISSOURI RIVER BASIN PROJECT, ST. FRANCIS UNIT, UPPER REPUBICAN DIVISION

Bonny Dam, the principal feature of the St. Francis unit, is located 2 miles west of Hale, Colo., on the South Fork of the Republican River.

The primary purpose of the unit is for the impoundment of water for irrigation and the control of floods. Additional benefits result from fish and wildlife conservation and recreational use of the reservoir. No operation and maintenance funds are required for these latter features, however, since under an agreement with the Bureau of Reclamation, the administration of the Bonny Reservoir area has been taken over by the Colorado State Fish and Game Department.

An appropriation of $13,209 is requested for operation and maintenance of Bonny Dam and Reservoir during fiscal year 1954, apportioned as follows: Irrigation $1,887 (reimbursable); flood control $11,322 (nonreimbursable).

WEBSTER UNIT, KANSAS

Mr. JENSEN. The next item is "Webster unit, Kansas."

We will insert in the record at this point page 107 of the special data requested of the Bureau and pages 571 through 574 of the justification.

(The page referred to is as follows:)

CONSTRUCTION

Missouri River Basin project, Webster unit, Kansas

	Actual, as of June 30, 1952	Estimated, 1953	Estimated, 1954
Expenditures	$156,343	$1,300,000	$6,080,000
Unliquidated obligations		200,000	
Total obligations	156,343	1,500,000	6,080,000

HISTORY OF PROJECT DEVELOPMENT

Location

North central Kansas along the South Fork of the Solomon River in Rooks and Osborne Counties.

Purpose

Irrigation, flood control, fish and wildlife, recreation, and sediment retention.

Authorization

Flood Control Act of December 22, 1944 (58 Stat. 887) and subsequent acts in accordance with a plan of development set forth in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78th Congress, 2d session.

Initial date:

Planning, 1941.
Advanced planning, 1952.
Construction, 1952.
Date of functional completion of construction, fiscal year 1957.
Fiscal year and amount of initial allotment of appropriations for construction, fiscal year 1953, $1,500,000.

Costs

Original estimated cost	$7,800,000
Allocation of cost unallocated	7,800,000
Present estimated cost	24,742,000
Allocation of cost:	
Irrigation	11,364,000
Flood control	13,258,000
Fish and wildlife	20,000
Recreation	100,000

REPAYMENT

Status of repayment contract negotiations

Contract negotiations must await organization of an irrigation district by the local people.

Amount to be repaid and repayment period

A 40 year repayment contract with not to exceed a 10 year development period will be negotiated to provide for the payments of distribution system costs assigned for payment by irrigation. Additional construction payments will occur in connection with water service charges to be paid by the district.

Repayment of costs allocated to irrigation

Water users	$1,996,000
MRBP pooled power revenues	9,368,000
Total	11,364,000

Repayment costs per acre

Federal investment per acre	$1,337
Water users	235
From power revenue	1,102
Annual water user charges:	
Construction	[1] 3.46
Operation and maintenance	3.77
Total	[2] 7.23

[1] To return in full costs payable by water users. This rate of payment would necessitate an additional water-service contract following initial 40-year repayment period to run for 28 years with construction component of $3.46 per acre.

[2] To allow for contingencies in payment capacity determination annual water chareg estimated to approximate 75 percent of increased payment capacity.

Increased net income per acre resulting from project irrigation (payment capacity)	$9.64

OPERATIONS

Schedule of operations

	Through fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Ultimate
Irrigation (acres) full				8,500
Total				8,500

CONSTRUCTION AND REHABILITATION

Summarized financial data

Estimated total obligations	$24,742,000
Total obligations to June 30, 1952	156,343
Allotment, fiscal year 1953	1,500,000
Total obligations, fiscal year 1953	1,500,000
Allotment, fiscal year 1954	6,080,000
Total obligations, fiscal year 1954	6,080,000
Balance to complete	17,005,657

JUSTIFICATION OF ESTIMATE

Location

The unit is located in north central Kansas along the South Fork of the Solomon River in Rooks and Osborne Counties. The site for Webster Dam, the principal feature, is 1 mile east of the town of Webster in Rooks County. Project lands, on both sides of the river, extend from Altan, Kans., to approximately 3 miles east of Osborne, Kans., all in Osborne County.

Description

The major functions to be performed by the Webster unit are irrigation, flood control, and sediment retention. Facilities will include the Webster Dam and Reservoir, the Alton diversion dam, Webster north and south side canals, with related laterals and drains. A total of 8,500 acres of land on both sides of the river will be irrigated.

Repayment

There is presently no organized irrigation district or repayment contract. Fiscal year 1953 funds were appropriated for construction of the dam only The definite plant report approved in October 1952, will form the basic pattern for district organization and the basis for negotiation of a repayment contract. Construction of purely irrigation features will be deferred pending consummation of the repayment contract.

Status

The definite plan report for the dam and reservoir was approved in October 1952, and construction of Webster Dam started in November 1952. As of June 30, 1953, the dam foundation will be approximately 50 percent complete and plans and specifications for the dam embankment, spillway, and outlet works will be ready for issuance.

Work proposed, fiscal year 1954

Program for fiscal year 1954 provides for completion of the dam foundation, relocation of the community of Webster, Kans., and approximately 30 percent completion of the contract for construction of dam embankment, spillway, and outlet works.

Justification

The tremendous damages resulting from floods in the Kansas River Basin clearly established the need for further regulation and control of unrestrained river flows. To avoid repetition of such disasters as occurred in July 1951, a comprehensive reservoir system is necessary on tributaries of the Kansas River, of which the Solomon River is an important part. Damages resulting from the July 1951 flood alone were estimated at over $16,000,000 along the Solomon River. This does not include the much heavier damages in the more populous and industrialized lower reaches of the Kansas River which is partly attributable to flooding of the Solomon River. Over 1,100,000 acre-feet of flood storage is required in the Solomon River Basin to control a similar flood. Webster Reservoir, along with Kirwin Reservoir now under construction, and the proposed Glen Elder Reservoir, will provide the necessary flood control capacity.

As in other Great Plains areas, the climate which produces flooding rains, conversely deprives the area of moisture in critical crop-growing periods. Although dry-land farming in the unit area produces abundantly with the adequate moisture, intermittent droughts and poor distribution of rainfall have impaired the predominantly agricultural economy and resulted in instability and insecurity. In the past, notably in the 1930's, this has caused farm abandonment and migration. More dependable crop yields sustained at higher levels through the introduction of irrigation will lend stability to the area. It will permit

diversification in farm operations, a balanced livestock program, and encourage the adoption of soil conservation practices.

Construction of Webster Dam, through its allocated flood-control capacity, will help insure uninterrupted production from the present economy and through its allocated irrigation capacity will increase the area's potential productivity; both functions which will contribute to the strength of our Nation.

The total estimated cost of the Webster unit has been increased from $21,167,000 to $24,742,000. This increase, the major portion of which is applicable to the irrigation facilities, results from the availability of more detailed and accurate estimating data obtained in preparing the definite plan report.

Schedule of construction program, fiscal years 1953 and 1954

Program item	Estimated total	Total to June 30, 1952	Program, current year 1953	Program, budget year 1954	Balance to complete
(1)	(2)	(3)	(4)	(5)	(6)
Construction program:					
Webster Dam and Reservoir	$19,097,000	$156,343	$1,250,000	$6,035,000	$11,655,657
Alton Diversion Dam	653,000				653,000
Webster North Side Canal	1,741,000				1,741,000
Webster South Side Canal	1,614,000				1,614,000
Webster North Side laterals	412,000				412,000
Webster South Side laterals	444,000				444,000
Webster North Side drains	252,000				252,000
Webster South Side drains	260,000				260,000
Farm unit development	40,000				40,000
General property	229,000			25,000	204,000
Total cost	24,742,000	156,343	1,250,000	6,060,000	17,275,657
Construction facilities			40,000	20,000	−60,000
Stores			10,000		−10,000
Total expenditures	24,742,000	156,343	1,300,000	6,080,000	17,205,657
Unliquidated obligations			200,000		−200,000
Total obligations	24,742,000	156,343	1,500,000	6,080,000	17,005,657
Method of financing:					
Allotment, fiscal year 1953			1,500,000		
Allotments required				6,080,000	17,006,000

Mr. JENSEN. You are asking for $6,080,000.

Mr. LINEWEAVER. That was a new start last year.

Mr. JENSEN. How much actual work has been done to date on this project?

Mr. MARKWELL. I have a statement on that.

Mr. JENSEN. Without objection it will be inserted in the record at this point.

(The statement referred to is as follows:)

CONSTRUCTON AND REHABILITATION—WEBSTER UNIT, KANSAS-MISSOURI RIVER BASIN PROJECT

The unprecedented Kansas River flood of July 1951 fully demonstrated the need for regulation, control, and beneficial use of the water resources of the Kansas River Basin. Congress appropriated funds for fiscal year 1953 to initiate construction of the multiple-purpose Webster Dam and Reservoir at an early date and thus enable the early realization of flood control benefits. Irrigation facilities are scheduled for construction to permit utilization of stored water as soon as it become available.

With the provision of the requested funds for fiscal year 1954 work will continue on the construction of the Webster Dam foundation and construction of the embankment will start during the fall of 1953. Other work incident to the construction of the dam system and the relocation of the community of Webster, Kans., will be carried on. It is desirable that construction activities be continued during fiscal year 1954 to maintain low annual indirect costs and provide the flood control benefits at the earliest possible date.

The contract for stripping the foundations is well underway, and the contract for the camp and warehouse has been executed. We are requesting money in 1954 for the completion of the dam foundation, relocation of the community of Webster, Kans., and approximately 30 percent completion of the contract for construction of dam embankment, spillway, and outlet works.

As you will recall, this is one of the dams we believe will aid materially in controlling the floods which did so much damage last year.

Mr. BUDGE. Mr. Chairman, may I ask a question on this project?

Mr. JENSEN. Yes.

Mr. BUDGE. I notice there is no organized irrigation district or repayment contract. What is the status of repayment for irrigation?

Mr. LINEWEAVER. There have been preliminary discussions. Since this project was only started last year, the irrigators, of course, until we got the initial appropriation, were not interested in forming an irrigation district. If the construction goes forward, an irrigation district will be formed. The Kansas people are becoming irrigation conscious. I was talking yesterday with Senator Carlson, and he said he gets more and more mail every day about irrigation in Kansas.

Mr. BUDGE. I would assume the Bureau would be relatively sure the district was going to be formed before it would attempt to justify the completion of construction, because the cost cannot be repaid to the Government until the district is formed.

Mr. LINEWEAVER. We are satisfied there will be an irrigation district. We have those assurances from the local people who have been sponsoring Webster, as well as other people in Kansas who have been supporting this program.

DRAINAGE AND MINOR COMPLETION PROGRAM

Mr. MARKWELL. May I put in a statement at this point on the drainage and minor completion program?

Mr. JENSEN. Without objection it is so ordered.

(The statement referred to is as follows:)

CONSTRUCTION AND REHABILITATION—MISSOURI RIVER BASIN PROJECT DRAINAGE AND MINOR COMPLETION PROGRAM

Under the drainage and minor completion program 7 units of the Missouri River Basin project require minor work on unfinished features during fiscal year 1953, 4 of which will require similar continuing work during fiscal year 1954. All major construction has been completed on these units and the remaining minor work is combined for simplicity of budget presentation. This program consists of work required on units which are functionally complete but need minor repair or replacement work, and those on which the only substantial work remaining is drainage. It is normally part of the last phase of construction and consists of that work essential as a final adjustment to insure satisfactory operation.

The fiscal year 1954 program for the four units of the Missouri River Basin project is to be financed by an allotment of $161,000 from the fiscal year 1954 appropriation. Twenty-nine thousand dollars is for drainage work on the Angostura unit in South Dakota; $108,000 is requested to cover the Government's responsibility for unusual maintenance on the C. B. & Q. Railroad relocation around Boysen Dam in Wyoming; $1,000 is for furnishing technical assistance to farmers preparing to irrigate their farms from Dickinson Reservoir in North Dakota, and $23,000 is for conversion of temporary facilities to an operating headquarters at Keyhole Dam in Wyoming.

As on all irrigation construction work where drains cannot be located and constructed until irrigation operations start and seepage areas develop, the drainage

work on the Angostura unit is just commencing. Initial field investigation will be made in fiscal year 1954 with actual construction anticipated and scheduled over several years. On the Boysen unit the relocation agreement with the C. B. & Q. Railroad provides that the Government will assume all unusual maintenance on that portion of the track relocated for a period of 5 years from the initial filling of the reservoir. For that reason funds must be available to meet any emergencies that arise. The only known work of this nature pending to date is the repair of a slide area on the access road. The small amount of funds requested for the Dickinson unit is for technical assistance to be furnished to farmers in the area who are preparing to irrigate their farms by pumping from the reservoir. Water service contracts are being drawn up with these farmers. Funds requested for Keyhole unit will permit the closing out of the temporary construction camp and completion of permanent operating facilities at Keyhole Dam.

CONSTRUCTION AND REHABILITATION

Summarized financial data

Allotment, fiscal year 1954	161,000
Total obligations, fiscal year 1954	161,000

JUSTIFICATION OF ESTIMATE

Description

The drainage and minor completion program consists of: Phase A units which are functionally complete but which require a small amount of additional unforseen repair or replacement work in the budget year; phase A units on which all construction features except drainage are complete or virtually complete (will be completed during budget year); and phase A units on which the only remaining construction is in connection with drainage and/or recreation. This program is to be financed by an allotment of $161,000 from the fiscal year 1954 appropriation.

The fiscal year 1954 program consists of continuing construction for early completion on these minor unfinished features.

The units involved and their fiscal year 1954 obligation programs are as follows:

Fiscal year 1954 obligation program

Angostura, S. Dak.	$29,000
Boysen, Wyo.	108,000
Dickinson, N. Dak.	1,000
Keyhole, Wyo.-S. Dak.	23,000
Total allotment	161,000

Repayment

The reimbursable portion of the costs to be incurred by the work on these projects will be repaid by contracts in force for sale of water and electrical energy except for the Keyhole unit for which the execution of the contract is scheduled in December 1952.

Justification

Work involved in the drainage and minor completion program consists of the drainage operations and miscellaneous minor cleanup and rectification work which normally must be done at the completion of the project. The amounts involved are very small as compared to the total estimated cost of the works with which they are connected. Work of this nature must be accomplished in order to place the project in a proper condition for turning over to water users or other operating organization and to remove the project from the construction status. Funds should be provided in fiscal year 1954 to accomplish an orderly closing out of the construction operations on the projects involved.

CHEYENNE DIVISION, ANGOSTURA UNIT, SOUTH DAKOTA

Description

The Angostura unit is located in the southwest corner of South Dakota on the Cheyenne River in Custer and Fall River Counties. A full water supply will be provided for aproximately 12,154 acres of semiarid lands and the power

plan has a capacity of 1,200 kilowatts. Construction of the main features is complete except for the drainage system and the recreation facilities.

Work proposed, fiscal year 1954

During this fiscal year work will continue on priming and puddling, drainage facilities and the settler's assistance program. Maintenance activities will be continued on the replacement of wildlife's habitat sites.

BOYSEN DIVISION, BOYSEN UNIT, WYOMING

Description

This unit consisting of Boysen Dam and Reservoir, powerplant, and appurtenant features, is located on the Bighorn River, in Fremont County, in central Wyoming about 20 miles upstream from Thermopolis, Wyo. All work is completed except for deferred construction on the relocation of the railroad and repair of the slide area on the access road.

Work proposed, fiscal year 1954

In accordance with the contract with the C. B. & Q. Railroad, an amount has been programed to cover deferred construction or abnormal maintenance. Repair of the slide area on the access road and resurfacing of the road will be completed during the year.

HEART DIVISION, DICKINSON UNIT, NORTH DAKOTA

Description

The Dickinson unit on the Heart River is located in Stark County in southwestern North Dakota. The Dickinson Reservoir, 1½ miles above the city of Dickinson, will provide water for municipal use and for irrigation of 915 acres or land. All construction on this unit is complete and the only unfinished features are the farm unit development and recreational facilities.

Work Proposed, Fiscal Year 1954

Technical assistance will be given to the farmers who have arranged to irrigate their land.

CHEYENNE DIVISION, KEYHOLE UNIT, WYOMING-SOUTH DAKOTA

Description

Keyhole unit on the Belle Fourche River is located in Crook County in northeastern Wyoming about 17 miles from Moorcroft, Wyo. This unit will provide supplemental irrigation water to approximately 55,708 acres of irrigable land and a municipal water supply for the city of Belle Fourche. All work is complete on the features of this unit except for the recreational program.

Work Proposed, Fiscal Year 1954

During this year a portion of the temporary camp utilities will be converted to a permanent basis and the remaining part will be salvaged.

PHASE B—UNITS READY FOR CONSTRUCTION

Mr. JENSEN. Make statements on the following: Bluff unit, Wyoming, $20,000; Charley Creek unit, Montana, $13,000; Glendo unit, Wyoming, $20,000.

This has nothing to do with the controversy between Wyoming and Montana, does it?

Mr. LINEWEAVER. Between Colorado and Nebraska?

Mr. JENSEN. Yes.

Mr. LINEWEAVER. No. Negotiations are progressing, and we believe the Wyoming Legislature has approved a report and the Nebraska and Colorado people are expected to agree to it soon. You will recall the proviso in the appropriation bill provides there shall be no construction on Glendo and Moorhead until the States have

agreed to the report and plans, and the plans have been approved by the Congress. The amount in the estimate is merely for advancing investigation.

Mr. JENSEN. Also make statements on: Glen Elder unit, Kansas, $50,000; Hanover unit, Wyoming, $52,000; Helena Valley unit, Montana, $40,000; Nickwall unit, Montana, $25,000; Owl Creek unit, Wyoming ,$30,000; Sargent unit, Nebraska, $45,000; Wilson unit, Kansas, $50,000; Yellowtail unit, Montana-Wyoming, $35,000.

(These statements appear on pp. 1414–1418.)

Mr. FENTON. Before you go into that I would like to ask: The Dickinson Dam is completed; is it not?

Mr. LINEWEAVER. Yes, sir.

Mr. FENTON. How is that paying?

Mr. LINEWEAVER. That is principally under contract for municipal water, and practically all the cost of Dickinson Dam will be repaid by the city of Dickinson.

Mr. FENTON. Have they started to give the water to Dickinson?

Mr. EATON. Yes, sir, the city of Dickinson is taking water from the dam and making payments as scheduled.

Mr. FENTON. How much did that dam cost?

Mr. LINEWEAVER. $1,774,000 for the cost of the dam and other items.

Mr. EATON. The cost of the dam structure is $1,384,700.

Mr. FENTON. Take that small unit, how is that being repaid to the Government?

Mr. EATON. The city of Dickinson executed a contract for payments according to the scheduled amount of water that they will draw each year. We agreed on a schedule of payments that they would make each year, which increases progressively over the years. For their maximum water supply, they pay approximately $13.60 to $29.50 an acre-foot for annual water deliveries and they get the money for that from their water assessments. They will pay out the Federal investment in about a 56-year period.

Mr. FENTON. How large a city is Dickinson? As I recall, Dickinson was only a village, in my estimation, of about a couple thousand people.

Mr. JENSEN. Off the record.

(Discussion off the record.)

Mr. EATON. It is an important trade center for that part of the country. There are a lot of farms scattered through there, and it is a trade center for a very large area. They were in desperate condition for water.

Mr. FENTON. Off the record.

(Discussion off the record.)

Mr. FENTON. All right.

BUFORD-TRENTON PROJECT, NORTH DAKOTA

Mr. JENSEN. I want to go back to the Buford-Trenton project for just a moment.

EROSION OF RIVER BANK

I understand that the riverbank at the point where the powerplant and the pumping plant is located, the plant which pumps water onto the Buford-Trenton project, is eroding to the degree at that point that the pumping station is threatened.

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. Is there any money in this budget request to stop the threatened destruction of that plant?

Mr. LINEWEAVER. No, sir; there is not.

Mr. JENSEN. Why is there not?

Mr. LINEWEAVER. In the first place, there is no authorization for funds for that purpose, Mr. Chairman.

Mr. JENSEN. Did you not know that there was a problem there?

Mr. LINEWEAVER. Yes, sir.

Mr. JENSEN. Why did you not ask for funds?

Mr. LINEWEAVER. Because we were barred from asking for funds because of lack of authorization. The contention was that there was no legislative authorization. In addition, the Corps of Engineers last year completed protective work that takes care of the present danger.

Mr. JENSEN. How much money do you estimate it would take to protect that ppumping station?

Mr. EATON. Our information is that there are other parts of the project that are in more immediate danger than the pumping plant. We have preliminary plans for corrective work for all those facilities threatened by floods and by river erosion. The total job for protection would be about $325,000.

Mr. JENSEN. How much would it cost to protect the pumping plant?

Mr. EATON. I will have to check the estimate on that and separate that out.

Mr. JENSEN. I understand that $40,000 would do it.

Mr. EATON. The estimated cost of complete protection to the pumping plant would be $260,000 on the basis of present river conditions prior to filling of Garrison Reservoir pool. However, smaller expenditures from time to time as needed should afford adequate protection. For example; if disruption of service is threatened by reason of floods and bank erosion, lateral 3.8 could be relocated rapidly and on short notice at a cost of about $65,000. However the regional director states that no expenditure is justified at this time and this question needs to be resolved with the water users. I might mention, sir, that when the situation first became critical about a year ago the Corps of Engineers went in with their emergency river funds and did some emergency work. Any additional work to protect the pumping plant and the canals can be made satisfactorily only after the river has changed its alinement. Such is the case for the $65,000 estimate just mentioned.

Mr. JENSEN. I know about that. That surely is in the emergency category. Now, do you not have some funds that you could use to protect that and other portions of the project?

Mr. LINEWEAVER. We would be glad to use the emergency fund if it were so construed that it was available for that purpose. There is no other source except the emergency fund and we have considered it reimbursable.

Mr. JENSEN. Now, Mr. Lineweaver, let us use some common sense in this thing.

Here we have a great investment in the pumping plant for that fine irrigation project on which veterans are making a living these days,

and that pumping plant is threatened. It will topple over into that river one of these days if something is not done.

Now, certainly, I am sure you folks know that this committee and the Congress of the United States would expect you to use such funds as you have available to do the work necessary to keep that terrific loss from occurring.

I am going to make a statement right now. If there is any member of the committee that objects to it I want them to speak up. I want you to know, so far as I am concerned, that I want you to take some emergency money, if it is necessary, and do that work so that that pumping plant is not destroyed. Now, certainly, you have that authority.

The Congress never expected your Department to sit idly by and see the destruction of Government property where a few thousand dollars could protect it from destruction. I am sure that every member of this committee would insist that you use already appropriated money for that very necessary purpose.

Does any member of this committee feel differently than I do on that question?

Mr. FENTON. Certainly not, after listening to Congressman Burdick, when he was here.

Mr. JENSEN. Yes.

Mr. FENTON. They had to advance money, did they not?

Mr. LINEWEAVER. Let me make this clear, Mr. Chairman: We would be perfectly willing. If the emergency fund is construed by this committee to be available for stabilizing banks to protect that pumping plant, and other project facilities, we will see that it is done.

Mr. JENSEN. First of all, of course, it is the responsibility of the Army engineers, and we recognize that, and we expect you to try to get the Army engineers to do the work. But, if they will not do it, and if they say that they do not have the authority at this time to do it, I certainly hope that you will jump onto that thing quickly and do as much as you have to do in order to protect that pumping plant.

How much money did that pumping plant cost originally?

Mr. LINEWEAVER. At the time that pumping plant was installed I presume it probably cost about $100,000.

Mr. EATON. It cost approximately $125,000.

Mr. LINEWEAVER. Of course now it could not be replaced for twice that amount or more.

Mr. JENSEN. No.

Mr. LINEWEAVER. And, of course, in addition to the cost of the pumping plant the damage that would be done by it going out and depriving those water users of a water supply would be far more than the cost of the stabilizing of the bank and installing a new pumping plant. It should be pointed out that the project settlers, perhaps with much justification, considering the action of rivers below other dams, attribute the severe erosion problems to the operation of Fort Peck Reservoir.

Mr. JENSEN. If that pumping plant went out it would mean that there would be no water available for the land this coming crop year.

Mr. LINEWEAVER. That is right.

Mr. JENSEN. And it could mean that some of those irrigators would be destroyed financially. I do not know whether it would go that far or not, but, certainly we cannot sit idly by and watch that thing happen. Mr. Lineweaver, are there any other items of current concern on the Buford-Trenton project?

Mr. LINEWEAVER. Yes, sir, Mr. Jensen. I should mention to you the water users have been anxious to complete construction of the project by providing some design changes at the pumping plant and at certain of the old structures and also certain new ones. They also desire some repair and improvements on certain canals and wasteways. These items of work would cost about $296,000 in addition to the cost of flood-protective items mentioned previously.

Unless instructed otherwise by this committee or the Congress, normal Bureau of Reclamation procedure would require that all of these various items of work would be undertaken only after express authorization and agreement by the water-users to include the costs in their repayment obligation.

UNDERGROUND AQUIFER, JAMES RIVER VALLEY

Mr. JENSEN. Now, I have received a memorandum from Congressman Harold Lovre, of South Dakota, and in it he said:

DEAR BEN: There has been discovered, in the James River Valley around Redfield and Huron, S. Dak., a large underground aquifer. Consequently, there is considerable local interest in overhead irrigation.

It is my understanding, Goodrich W. Lineweaver, of the Bureau of Reclamation, is going to testify this afternoon. I would consider it a personal favor if you would ask Mr. Lineweaver, of the Bureau, what the Bureau of Reclamation considers or recommends necessary to be done immediately to determine the feasibility and effectiveness of overhead irrigation from the underground aquifer. Also, ask him if the Bureau has any plans for the development of this underground aquifer not only for now, but for next year.

Would you comment on that, Mr. Lineweaver?

Mr. LINEWEAVER. Briefly, Mr. Lovre talked to me about it, and so did Senator Mundt. I talked to the regional director and the district manager at Huron.

For $50,000, if we were instructed to transfer other funds to use in our phase B activities on the Oahe unit of the James River development, we could put in this summer some 6 or 8 wells which would be for demonstration purposes. Then next year, something like $160,000 would be required to spot wells at other points in cooperation with the South Dakota authorities and have a more thorough demonstration.

Our people believe that there is a reasonable chance to develop a ground water supply which will assist materially in solving the problems of that area in the James River Valley in South Dakota. We favor this program if funds are provided by transfer or otherwise.

Mr. JENSEN. All right. Off the record.

(Discussion off the record.)

TRANSMISSION DIVISION

Mr. JENSEN. Now we will go into the transmission system.

Mr. MCPHAIL. Mr. Chairman, may I say a word off the record, first?

Mr. JENSEN. Yes.

(Discussion off the record.)

Mr. JENSEN. We will go into the Transmission Division now. Request is made for $19,765,000 for the completion of transmission lines and related facilities and for certain new starts.

Mr. McPhail, please take each of the items as they appear in the justifications and make a statement on them and also on the new proposed transmission line construction items. Make a statement on each one of those in justification of the requests which are in the budget, which are the figures on which we are operating as yet.

(The statements referred to follow:)

SIOUX FALLS-BROOKINGS 115-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$1,634,529
Program fiscal year 1954	714,271
Balance to complete	860,200
Total, estimated cost	3,209,000

Description of facilities

This line is between Sioux Falls and Brookings, S. Dak., and is part of the East River loop and is not a separable facility.

Sioux Falls-Brookings 115-kilovolt line	miles	60
Sioux Falls substation	kilovolt-amperes nominal	41,000
Flandreau substation	do	8,500
Brookings substation	do	35,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	100	Complete.
Sioux Falls substation	35	(1).
Flandreau substation	44	(1).
Brookings substation	48	(1).

[1] Portions of the substations sufficient for necessary initial phase use as part of advanced construction program are completed in fiscal year 1953. Total completion of substations will be coordinated to coincide with availability of power from main stem powerplants.

Initial construction appropriation, fiscal year 1951.

Percent total complete, June 30, 1953, 51 percent.

Purpose

These facilities are a part of the Bureau's system for marketing Missouri River Basin power and energy at established rates in South Dakota. These transmission facilities are a part of an approved advanced program of construction of the 115-kilovolt loop system and will be used initially by the East River Electric Power Cooperative through a transmission arrangement to serve its customers. The cooperative will be required during the interim period to pay the United States an agreed amount for transmission charges which are calculated to cover operation and maintenance expenses and all other annual expenses based on the proportionate use of the facilities.

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$1,361,565
Program fiscal year 1954	669,150
Balance to complete	1,699,485
Total, estimated cost	3,730,200

Description of facilities

This line is between Brookings and Watertown, S. Dak., and is part of the East River loop and is not a separable facility.

Brookings-Watertown 115-kilovolt line	miles	50
Watertown substation	kilovolt-ampere nominal	92,500

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	100	Complete.
Watertown Substation	25	(1).

[1] Portions of the substations sufficient for necessary initial phase use as part of advanced construction program are completed in fiscal year 1953. Total completion of substations will be coordinated to coincide with availability of power from main stem powerplants.

Initial construction appropriation, fiscal year 1951.
Percent total complete, June 30, 1953, 37 percent.

Purpose

These facilities are a part of the Bureau's system for marketing Missouri River Basin power and energy at established rates in South Dakota. These transmission facilities are a part of an approved advanced program of construction of the 115-kilovolt loop system and will be used initially by the East River Electric Power Cooperative through a transmission arrangement to serve its customers. The Cooperative will be required during the interim period to pay the United States an agreed amount for transmission charges which are calculated to cover operation and maintenance expenses and all other annual expenses based on the proportionate use of the facilities.

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$4,070,712
Program fiscal year 1954	898,392
Balance to complete	2,514,806
Total, estimated cost	7,484,000

Description of facilities

This line is between Watertown and Armour, S. Dak., and is part of the East River loop and is not a separable facility.

Watertown-Groton-Huron-Armour 115-kilovolt line	miles	251
Summit substation	kilovolt-amperes nominal	13,500
Groton substation	do	25,000
Huron substation	do	87,000
Woonsocket substation	do	10,000
Mount Vernon substation	do	15,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	100	Complete.
Summit Substation	28	(1).
Groton Substation	30	(1).
Huron Substation	20	(1).
Woonsocket Substation	77	(1).
Mount Vernon Substation	88	(1).

[1] Portions of the substations sufficient for necessary initial phase use as part of advanced construction program are completed in fiscal year 1953. Total completion of substations will be coordinated to coincide with availability or power from main stem power plants.

Initial construction appropriations, fiscal year 1951.
Percent total complete, June 30, 1953, 54 percent.

Purpose

These facilities are a part of the Bureau's system for marketing Missouri River Basin power and energy at established rates, in South Dakota. These transmission facilities are a part of an approved advanced program of construction of the 115-kilovolt loop system and will be used initially by the East River Electric Power Cooperative through a transmission arrangement to serve its customers. The cooperative will be required during the interim period to pay the United States an agreed amount for transmission charges which are calculated to cover operation and maintenance expenses and all other annual expenses based on the proportionate use of the facilities.

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$2,247,827
Program fiscal year 1954	730,373
Balance to complete	437,800
Total, estimated cost	3,416,000

Description of facilities

This line is between Armour and Sioux Falls, S. Dak. The estimated cost includes tap lines from this line into Fort Randall and Gavins Point powerplant switchyards, the source of Missouri River Basin power. These facilities are part of the East River loop and are not a separable facility.

Armour-Sioux Falls 115-kilovolt line	miles	158
Fort Randall tap—Fort Randall 115-kilovolt line	mile-circuits	2–12
Gavins Point tap—Gavins Point 115-kilovolt line	do	2–4
Armour substation	kilovolt-amperes nominal	15,000
Tyndall substation	do	22,500
Beresford substation	do	20,000

Status of construction

	Estimated percent complete June 30, 1953	Expected completion
Armour-Sioux Falls line	100	Complete.
Fort Randall tap, Fort Randall	25	(1).
Gavins Point tap, Gavins Point	4	(1).
Armour substation	42	(1).
Tyndall substation	29	(1).
Beresford substation	58	(1).

[1] Portions of the substations sufficient for necessary initial phase use as part of advanced construction program are completed in fiscal year 1953. Total completion of substations will be coordinated to coincide with availability of power from main stem power plants.

Initial construction appropriation, fiscal year 1951.
Percent total complete, June 30, 1953, 66 percent.

Purpose

These facilities are a part of the Bureau's system for marketing Missouri River Basin power and energy at established rates in South Dakota. These transmission faciilties are a part of an approved advanced program of construction of the 115-kilovolt loop system and will be used initially by the East River Electric Power Cooperative through a transmission arrangement to serve its customers. The cooperative will be required during the interim period to pay the United States an agreed amount for transmission charges which are calculated to cover operation and maintenance expenses and all other annual expenses based on the proportionate use of the facilities.

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$2,455,500
Program fiscal year 1954	588,500
Balance to complete	484,000
Total, estimated cost	3,528,000

Description of facilities

This transmission line is between Rapid City and Midland, S. Dak.

Rapid City-Midland 115-kilovolt line	miles	109
Wicksville substation	nominal kilovolt-amperes	2,000
Wall substation	do	2,500
Philip substation	do	5,500
Midland substation	do	6,000
Rapid City substation	do	20,000
Weaver substation	do	15,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	100	Complete.
Wicksville substation	100	Do.
Wall substation	100	Do.
Philip substation	100	Do.
Midland substation	100	Do.
Rapid City substation	11	Fiscal year 1953.
Weaver substation	4	Fiscal year 1954.

Initial construction appropriation, fiscal year 1951.
Percent total complete, June 30, 1953, 70 percent.

Purpose

This transmission line is part of the Bureau's Oahe-Rapid City transmission system for the marketing of Missouri River Basin power in the central and western areas of South Dakota. The Midland-Rapid City portion of the total facilities are being constructed as part of an approved program for construction in adavance of its need by the United States in order that the facilities could be used initially by the Rushmore G. & T. Electric Cooperative. The cooperative will obtain its power from its own plant in Osage, Wyo., through an agreement whereby the Black River Power & Light Co. will transmit the cooperative's power from Osage to the Rapid City end of this transmission line. The Rushmore G. & T. Electric Cooperative will be required during the interim period to pay the United States an agreed amount for transmission charges which are calculated to cover operation and maintenance expenses and all other annual expenses based on the proportionate use of the facilities. Upon completion of the total Oahe-Rapid City system, the temporary arrangement with Rushmore will terminate and the facility will be used for its intended purpose.

FORT RANDALL-WINNER 115-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$1,224,188
Program fiscal year 1954	112,812
Balance to complete	0
Total, estimated cost	1,337,000

Description of facilities

This line is between Fort Randall switchyard and Winner, S. Dak.

Fort Randall-Winner 115-kilovolt line	miles	72
Bonesteel substation	nominal kilovolt-amperes	2,000
Gregory substation	do	3,750
Winner substation	do	8,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	96	Fiscal year 1954.
Bonesteel substation	100	Fiscal year 1953.
Gregory substation	100	Do.
Winner substation	67	Fiscal year 1954.

Initial construction appropriation, fiscal year 1951.
Percent total complete, June 30, 1953, 92 percent.

Purpose

These facilities are part of the Bureau's system for the marketing of Missouri River Basin power in the southern part of South Dakota. The Fort Randall-Winner 115-kilovolt transmission line and associated substations are part of an approved program for construction in advance of its need by the United States in order that the facilities could be used by the Rosebud Electric Association through a transmission arrangement to serve its customers. The cooperative will be required during this interim period to pay the United States an agreed transmission charge calculated to cover operation and maintenance expenses and part of the annual repayment and replacement costs based on proportionate use of the facilities.

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$10,509,779
Program, fiscal year 1954	4,809,340
Balance to complete	6,174,881
Total, estimated cost	21,494,000

Description of facilities

This transmission line is between Fort Randall switchyard and Garrison switchyard.

Fort Randall-Oahe-Mobridge-Garrison 230-kilovolt line	miles	371
Mobridge substation	kilovolt-amperes nominal	25,000
Oahe substation	do	80,000
Bismarck	do	60,000
Washburn	do	15,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	65	Fiscal year 1954.
Mobridge substation	0	Fiscal year 1957.
Oahe substation	0	Fiscal year 1955.
Bismarck substation	22	(1).
Washburn substation	58	(1).

[1] Portions of the substations sufficient for necessary initial-phase use as part of advanced-construction program are completed in fiscal year 1953. Total completion of substations will be coordinated to coincide with availability of power from main-stem powerplants.

Initial construction appropriation, fiscal year 1951.
Percent total complete, June 30, 1953, 49 percent.

Purpose

This transmission line will interconnect the Garrison, Oahe, and Fort Randall powerplants on the Missouri River. It is one of the main backbone transmission lines of the transmission system and by virtue of interconnecting these powerplants makes possible the transfer of power from one area to another as required by overall reservoir regulations, resulting in optimum operation of the interconnected powerplants and greatly increasing the amount of firm power available.

FORT RANDALL-SIOUX CITY 230-KILOVOLT TRANSMISSION LINE AND SUBSTATION (DOUBLE CIRCUIT)

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$2,279,779
Program, fiscal year 1954	4,169,949
Balance to complete	5,682,272
Total estimated cost	12,132,000

Description of facilities

This line is between Fort Randall switchyard and Sioux City, Iowa.

Fort Randall-Sioux City 230-kilovolt line	miles double-circuit	122
Sioux City substation	kilvolt-amperes	120,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	24	Fiscal year 1955.
Sioux City substation	9	Do.
Initial construction appropriation		Fiscal year 1952.
Percent total complete, June 30, 1953		19 percent.

Purpose

This transmission line will provide a source of power at Sioux City for markets in that area. It is also a section of a transmission line that will transmit Missouri River Basin power to Omaha, Nebr., and is one of the major backbone transmission lines required for transmitting Missouri River Basin power to load centers for delivery to public agencies, REA's, municipalities, and other customers of the Bureau.

OAHE-MIDLAND 115-KILOVOLT TRANSMISSION LINE AND SUBSTATION

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$290,000
Program fiscal year 1954	535,000
Balance to complete	173,000
Total, estimated cost	998,000

Description of facilities

This line is between the Oahe switchyard and Midland, S. Dak.

Oahe-Midland 115-kilovolt line	miles	54
Pierre substation	kilovolt-amperes nominal	10,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	36	Fiscal year 1954.
Pierre substation	0	Fiscal year 1955.

Initial construction, fiscal year 1953.
Percent total complete June 30, 1953, 29 percent.

Purpose

This transmission line is a part of the Bureau's Oahe-Rapid City transmission system for marketing of Missouri River Basin power in the central and western areas in South Dakota. The Oahe-Midland section of the total facilities together with the Rapid City-Midland section constructed as an advanced construction program will provide Bureau power and energy to this area of South Dakota.

BIG BEND-HURON-WATERTOWN 230-KILOVOLT TRANSMISSION LINES AND SWITCHYARD (DOUBLE CIRCUIT)

Estimate of appropriations

Estimated expenditures through fiscal year 1953	0
Program, fiscal year 1954	$400,000
Balance to complete	8,547,000
Total estimated cost	8,947,000

Description of facilities

This double-circuit transmission line is between the Big Bend switchyard and Watertown, S. Dak., including a double-circuit tap to Big Bend powerplant.

Big Bend-Watertown 230-kilovolt line (miles double circuit)	135.5
Big Bend 230-kilovolt tap line (miles double circuit)	4.5

Big Bend tap switchyard, switch station.

Status of construction

Construction appropriations are requested initially in fiscal year 1954.

Purpose

This transmission line and switchyard constitute a vital link in the backbone transmission system for the Missouri River Basin project. It is designed as a double-circuit line to be strung on double-circuit steel towers. The first circuit of this line is scheduled for completion by June 1956 in order to insure its availability for fall and winter loads of 1956. The program of construction requires approximately 9 months for surveys, preparation of specifications, advertising, award of contracts, and other preparation for actual start of construction. The construction schedule itself will require three construction seasons. This means that in order to be available for service by the fall of 1956, construction funds will be required in fiscal year 1954, 1955, and 1956. In order to be prepared to start construction in the spring of 1954, construction funds in the amount of $400,000 must be provided in the appropriations for fiscal year 1954.

This line will be supplied with power from the Fort Randall switchyard as soon as the line is ready for service, through the 230-kilovolt transmission line from Fort Randall to Oahe which is now under construction. Power will be available from Fort Randall prior to completion of this line, and this line will be urgently needed in order to supply such power to loads on the East River loop in South Dakota.

The importance of this line in the early days of operation lies in the fact that the East River loop which is approximately 534 miles in length cannot be operated at 115-kilovolt on a commercial basis at its full capacity if strong support at approximately mid point in the loop is not available. This line will give such support at Watertown which is not far from the midpoint of the loop from Fort Randall. A-C analyser board studies indicate that with nonsupport, voltage raise in excess of 40 percent will occur on this loop under light load conditions if one side of the loop is open between Fort Randall and Sioux Falls. Inasmuch as this situation may occur at any time in actual commerical operation, the Big Bend-Watertown supporting facility is essential.

In order that the voltage regulation be kept within reasonable limits, other means of providing necessary regulation has been considered but rejected in favor of the Big Bend-Watertown line for the following reasons. Installation of condenser facilities at Watertown could accomplish the same results but such installation would be expensive and also would be unnecessary if the line from Big Bend is installed. The Big Bend-Watertown line must be installed later in any case if power from the main stem plants (Fort Randall-Oahe-Big Bend) is to be transmitted into western Minnesota and Iowa as is now planned. It is therefore the most economical as well as a very satisfactory arrangement to proceed with the construction of this line in sufficient time to make it available by 1956 for supply and regulation of the East River loop.

Load estimates indicate that loads on this loop will exceed 80,000 kilowatts by December 1956. It will be impossible, as stated above, for voltage regulation reasons to supply such loads from the southern part of the loop only. It is essential therefore that another supply be introduced into the loop more nearly at the opposite end of Fort Randall. The connection at Watertown would assure this.

The Big Bend-Huron-Watertown link is 140 miles long. The construction from a parctical standpoint should be awarded to one contractor. However, the length and the magnitude of construction of this high voltage line is such that one contractor cannot be expected to complete this line in much less than three working seasons.

Failure to proceed with construction of this line in fiscal year 1954 will delay initial operation of such line until calendar year 1957 which would prevent supplying available power from Fort Randall to loads on the loop by the time such loads will require supply. A very large investment is now being made in the Fort Randall development and failure to make the power benefits available from this plant to loads waiting for such power will result in loss in power revenues, will render idle high cost generating equipment now under construction and will result in failure by the Government to meet urgent market requirements because of a necessary transmission link.

The conclusions are that load requirements urgently demand this line be available for operation in calendar year 1956, and economic reasons indicate that failure to proceed with such construction will result in important revenue losses to the United States Government. It is essential and strongly recommended therefore that appropriations for this line in the amount of $400,000 be made available in fiscal year 1954.

FARGO-FERGUS FALLS-BENSON-GRANITE FALLS-MANKATO-BLUE EARTH- JACKSON-FORT RANDALL 230-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	[1] $45,000
Program fiscal year 1954	4,000,000
Balance to complete	39,569,000
Total, estimated cost	43,614,000

[1] This amount is allocated for preconstruction-planning work.

Description of facilities

This line is between Fargo, N. Dak., and the Fort Randall switchyard via Fergus Falls, Benson, Granite Falls, Mankato, Blue Earth, and Jackson, Minn.

Fargo-Fort Randall 230-kilovolt line	miles	629
Fergus Falls substation	kilovolt-amperes nominal	75,000
Benson substation	do	120,000
Granite Falls substation		60,000
Mankato substation	do	175,000
Jackson substation	do	90,000

Status of construction

No construction fund appropriations have been requested.

Purpose

This transmission line is part of the main grid backbone transmission system and by virtue of its connection to the Fort Randall and Garrison powerplants which are now under construction, will provide power to western Minnesota.

The rural electric cooperatives, municipalities, and other preference customers as wel as private utilities in western Minnesota are eagerly awaiting the day when power from the Federal Government's Missouri River Basin development would become available to them. This Federal power will greatly assist in their development. The interested operating agencies, both public and private, have, in a spirit of cooperation, developed and agreed upon a definite plan for the distribution of this power.

In a letter dated December 4, 1951, 16 farm electric cooperatives and 3 privately owned electric companies, all now operating facilities in the State of Minnesota, joined in a request that the Bureau of Reclamation plan its transmission line program to fit in with their new distribution plan. The line proposed will fulfill this purpose and will constitute the initial 230-kilovolt transmission loop between Fort Randall and Garrison powerplants. That the line is felt by the 19 operating agencies to be an important link in the proposed plan is attested by the following quotation from their December 4 letter:

"United support for your 230,000-volt line is the heart of the plan. Specifically this is how we visualize its working. The Government would build and own the 230,000-volt line and send power from its Missouri River dams over the line on the first leg of its trip to the customers. At appropriate points mentioned generally above, the big line would be tapped and power put into the lower voltage lines of the cooperatives and the companies. Then over available lines, the interested parties would team up to deliver the power to the ultimate users."

It is absolutely essential that construction of this 230-kilovolt transmission line be undertaken in fiscal year 1954, if power is to be supplied to western Minnesota by the time the Army completes the powerplants now under construction on the main stem of the Missouri River.

In response to Chairman Jensen's request the following information is furnished.

FARGO-FERGUS FALLS 230-KILOVOLT TRANSMISSION LINE AND FERGUS FALLS SUBSTATION

Description of facilities and total estimated cost

This 230-kilovolt transmission line will extend from Fargo, N. Dak., to Fergus Falls, Minn., a distance of 55 miles. A substation of 75,000-kilovolt-ampere capacity will be constructed near Fergus Falls to serve the load requirements in that area. The financial summary of this line and substation facilities are as follows:

Financial summary

Estimate, fiscal year 1954	$298,000
Program, fiscal year 1953	4,000
Cost to June 30, 1952	0
Balance to complete	3,615,000
Total estimated cost	3,917,000

FERGUS FALLS-BENSON 230-KILOVOLT TRANSMISSION LINE AND BENSON SUBSTATION

Description of facilities and total estimated cost

This 230-kilovolt transmission line will extend from Fergus Falls, Minn., to Benson, Minn., a distance of approximately 79 miles. A 120,000-kilovolt-ampere substation will be constructed to serve the load requirements in the Benson area. A financial summary of these facilities is as follows:

Financial summary

Estimate, fiscal year 1954	$266,000
Program, fiscal year 1953	6,000
Cost to June 30, 1952	0
Balance to complete	7,606,000
Total estimated cost	7,878,000

ADVANCED CONSTRUCTION PROGRAM

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$10,519,000
Program, fiscal year 1954	15,000
Balance to complete	−35,000
Total estimated cost	10,499,000

Description of facilities

This North Dakota transmission loop consisting of 650 miles of high-voltage transmission line and 14 substations is required to market Missouri River Basin power in north-central North Dakota. The facilities were constructed in advance of availability of power from Missouri River Basin so the REA could meet their power requirements in the most economical manner at the earliest possible date. The REA will pay all out-of-pocket charges as well as pay interest and amortization on the Bureau's lines used by it before Garrison powerplant completion. The $15,000 in the fiscal year 1954 budget is to complete the Lakota substation, the last remaining work on these transmission-line facilities.

BISMARCK-DEVAUL 69-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$708,141
Program, fiscal year 1954	55,000
Balance to complete	110,859
Total estimated cost	874,000

Description of facilities

This line is between Bismarck and DeVaul, N. Dak.

Bismarck-DeVaul 69-kilovolt line	miles	42
Custer Trail substation	kilovolt-amperes nominal	1,500
DeVaul substation	do	2,500
Distribution substations—Heart Butte pump plants, 56 units	do	1,786

Status of construction

[This line is between Bismarck and DeVaul, N. Dak.]

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	100	Complete.
Custer Trail substation	93	Fiscal year 1954.
DeVaul substation	72	Do.
Distribution substations	48	Do.

Initial construction appropriation, fiscal year 1951.
Percent total complete, June 30, 1953, 81 percent.

Purpose

This line will provide power for the Mor-Gran-Sou Electric Cooperative, Inc., at the Custer Trail and DeVaul substations. Additional power will be supplied through these substations for 56 pumping units of the Heart River irrigation unit. The line will also be used by Montana-Dakota Utilities Co. to transmit power from Bismarck to its system west of DeVaul.

WILLISTON-GARRISON 115-KILOVOLT TRANSMISSION LINE AND SUBSTATION

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$2,514,965
Program fiscal year 1954	20,000
Balance to complete	18,035
Total estimated cost	2,553,000

Description of facilities

This line is between Williston, S. Dak., and Garrison switchyard.

Williston-Garrison 115-kilovolt line	miles	179
Beulah substation	kilovolt-amperes, nominal	7,500

Status of construction

	Percent	Expected completion
Transmission line	98	(1).
Beulah substation	100	Completed.

[1] The transmission line is complete except for extensions into Garrison switchyard.

Initial construction appropriation, fiscal year 1947.
Percent total complete, June 30, 1953, 99 percent.

Purpose

This transmission between Williston and Garrison was placed in service in calendar year 1949. The work programed in fiscal year 1954 is to start construction of the permanent connection into the Garrison switchyard to replace the temporary connection between the Williston-Garrison transmission line and the central North Dakota system and provide a permanent connection between the Fort Peck and Garrison power plants and other transmission facilities.

GARRISON-VOLTAIRE 115-KILOVOLT TRANSMISSION-LINE EXTENSION TO GARRISON SWITCHYARD

Estimate of appropriations

Estimated expenditures through fiscal year 1953	0
Program fiscal year 1954	$26,000
Balance to complete	31,000
Total, estimated cost	57,000

Description of facilities

This line is between the existing transmission line and the proposed Garrison switchyard.

Garrison-Voltaire 115-kilovolt-line extension, 3 miles.

Status of construction

Transmission line:

Estimated percent complete June 30, 1953	0
Expected completion (fiscal year)	1955

Initial construction appropriation, fiscal year 1954.

Percent total complete, June 30, 1953, 0 percent.

Purpose

This transmission line is an extension of the Garrison-Voltaire 115-kilovolt line to connect the central North Dakota loop system with the Garrison powerplant switchyard. The central system was constructed in advance of availability of power from Garrison powerplant and was used by the REA's which, during the interim period, paid the United States an agreed transmission charge that was calculated to cover operation and maintenance expense and part of the annual repayment and replacement costs based on proportionate use of the facilities.

VALLEY CITY SUBSTATION ADDITIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	0
Program fiscal year 1954	$15,000
Balance to complete	25,000
Total, estimated cost	40,000

Description of facilities

Additional facilities required to serve customers from this substation. No increase in capacity is included.

Status of construction

Substation additions:

Estimated percent complete June 30, 1953	0

Scheduled completion, fiscal year 1955.

Initial construction appropriation, fiscal year 1954.

Percent total complete, June 30, 1953, 0 percent.

Purpose

These additions are to an existing Bureau substation and will provide 12.5-kilovolt facilities for serving the municipality of Valley City after the powerplant at the Garrison Dam is in production. The facilities required are the take-off structure with associated voltage regulator and circuit breakers. Sufficient 12.5-kilovolt capacity has been provided in the main transformer for this future load.

EDGELEY-GROTON 115-KILOVOLT TRANSMISSION LINE AND SUBSTATION

Estimate of appropriations

Estimated expenditures through fiscal year 1953	0
Program fiscal year 1954	$511,000
Balance to complete	1,131,000
Total, estimated cost	1,642,000

Description of facilities

This line is between Edgeley, N. Dak., and Groton, S. Dak.

Edgeley-Groton 115-kilovolt line	miles	85
Ellendale substation	kilovolt-amperes nominal	20,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	0	Fiscal year 1955.
Ellendale substation	0	Do.

Initial construction appropriation, fiscal year 1954.
Percent total complete, June 30, 1953, 0 percent.

Purpose

This transmission line will interconnect the existing 115-kilovolt system in North Dakota with the existing 115-kilovolt system in South Dakota, thus assuring more reliable service on each system and permitting emergency transfer of power between the 2 systems. The line will also permit delivery of power to cooperatives and the Montana-Dakota Utilities Co.

LAKOTA-GRAND FORKS 115-KILOVOLT TRANSMISSION LINE AND SUBSTATION

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$105,000
Program, fiscal year 1954	985,000
Balance to complete	2,927,000
Total, estimated cost	4,017,000

Description of facilities

This line is between Lakota and Grand Forks, N. Dak.

Lakota-Grand Forks 115-kilovolt line	miles	63
Grand Forks substation	kilovolt-ampere nominal	75,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	0	Fiscal year 1955.
Grand Forks substation	0	Fiscal year 1956.

Initial construction appropriation, fiscal year 1954.
Percent total complete, June 30, 1953, 0 percent.

Purpose

Funds for preliminary design work on this line and the Grand Forks substation were provided for in fiscal year 1953. This transmission line is to bring power to the Grand Forks substation where power will be delivered to cooperatives and municipalities in the vicinity of Grand Forks. Power will also be delivered to the Northern States Power Co.

JAMESTOWN-FARGO 230-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$135,000
Program, fiscal year 1954	1,000,000
Balance to complete	9,251,000
Total, estimated cost	10,386,000

Description of facilities

The line is between Jamestown and Fargo, N. Dak.

Jamestown-Fargo 230-kilovolt line	miles	97
Fargo substation	kilovolt-amperes nominal	150,000
Jamestown substation addition	do	87,500

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion initial phase
Transmission line	0	Fiscal year 1956.
Jamestown substation additions	0	Do.
Fargo substation	0	Do.

Initial construction appropriation, fiscal year 1954.
Percent total complete, June 30, 1953, 0 percent.

Purpose

This transmission line is part of the main backbone 230-kilovolt grid loop system interconnecting the Garrison and Fort Randall powerplants. Power will be delivered at Fargo to 2 power companies, 1 cooperative, and 1 municipality, all of whom are anxious to receive power from the Garrison powerplant when it becomes available. The first unit at Garrison is scheduled to be completed in April of 1955 and the first 3 units are scheduled for completion by September 1956. Funds are necessary in fiscal year 1954 to start construction of this transmission line in order that it can be completed by the time power is available from the Garrison powerplant.

The Jamestown-Fargo transmission line is an important part of the 230-kilovolt loop circuit which will interconnect the Garrison powerplant with Federal powerplants to be constructed downstream on the Missouri River.

CROW CREEK SUBSTATION

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$68,387
Program fiscal year 1954	48,080
Balance to complete	15,533
Total, estimated cost	132,000

Description of facilities

This addition is required to provide pumping service to a Federal irrigation unit.

Crow Creek substation	kilovolt-amperes	2,500

Status of construction

Substation: Estimated percent complete June 30, 1953, 52; expected completion:[1]
Initial construction appropriation, fiscal year 1952.
Percent total complete, June 30, 1953, 52 percent.

[1] These facilities will be installed as required by the substation operation.

Purpose

This substation is required to provide electric pumping energy for Crow Creek pump unit.

Initially the substation will receive energy from the Montana Power Co.'s East Helena-Trident transmission line in accordance with an existing contract. Ultimately it will receive power directly from the Bureau grid system.

CANYON FERRY-EAST HELENA 115-KILOVOLT TRANSMISSION LINE (DOUBLE CIRCUIT)

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$264,000
Program fiscal year 1954	6,000
Balance to complete	0
Total, estimated cost	270,000

Description of facilities

This line is between Canyon Ferry switchyard and East Helena, Mont.

Canyon Ferry-East Helena 115-kilovolt line, 7.5 miles (double circuit).

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	98	Fiscal year 1954.
Initial appropriation		Fiscal year 1951.
Percent total complete, June 30, 1953		98 percent.

Purpose

This line will initially provide the only outlet for the Canyon Ferry powerplant. It will extend to the Helena-Great Falls line of the Montana Power Co. which the Bureau under an existing contract has the right to use.

ALCOVA-BOYSEN-LOVELL 115-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$3,572,549
Program, fiscal year 1954	205,000
Balance to complete	225,000
Total estimated cost	4,002,549

Description of facilities

This line is between the Alcova switchyard and Lovell, Wyo.

Alcova-Boysen-Lovell 115-kilovolt line	miles	203
Thermopolis substation	kilovolt-amperes	23,333
Lovell substation	do	13,000
Basin-Worland substation	do	10,000

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	100	Complete.
Thermopolis substation	100	Do.
Lovell substation	100	Do.
Basin-Worland substation	0	Fiscal year 1955.

Initial construction appropriation, fiscal year 1950.

Percent total complete, June 30, 1953, 89 percent.

Purpose

The Alcova-Boysen-Thermopolis-Lovell 115-kilovolt circuit and Thermopolis and Lovell substations are substantially completed, forming an important segment of the major transmission grid interconnecting sources of generation. The Basin-Worland substation is an additional facility to be constructed on this line to serve irrigation pumping power requirements in the area.

YELLOWTAIL-BILLINGS 115-KILOVOLT TRANSMISSION LINE AND SUBSTATION

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$0
Program fiscal year 1954	715,000
Balance to complete	735,000
Total, estimated cost	1,450,000

Description of facilities

This line is between the proposed Yellowtail switchyard site and Billings, Mont.

Yellowtail-Billings 115-kilovolt line	44 miles.
Billings substation	15,000 kilovolt-amperes.

Status of construction

	Estimated percent complete June 30, 1953	Expected completion
Transmission line	0	Fiscal year 1955.
Billings substation	0	(1).

[1] This substation will complete the initial stage of construction in fiscal year 1955.

Initial construction appropriation, fiscal year 1954.
Percent total complete, June 30, 1953, 0 percent.

Purpose

This 115-kilovolt transmission line will connect with the Lovell-Yellowtail 115-kilovolt transmission line now under construction and will provide the means of transmitting power to northern Wyoming. This will be accomplished by interchange of Fort Peck and Canyon Ferry power with the Montana Power Co., or by wheeling power, or by purchase of energy from the company's steam plant at Billings, Mont.

This line will also serve to furnish construction power for the Yellowtail Dam when it is constructed. When Yellowtail power plant is complete this line will interconnect the Yellowtail plant with other plants on the Missouri River Basin system.

REA AND IRRIGATION PUMPING TAP LINES AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$661,757
Program fiscal year 1954	213,466
Balance to complete	5,538,077
Total, estimated cost	6,413,300

Description of facilities

Sadie Flat tap line	1.5 miles.
Big Sandy substation	5,000 kilovolt-amperes.
Meeteetse substation	1,000 kilovolt-amperes.
Hamilton Dome substation	2,000 kilovolt-amperes.
Muddy Ridge substation	Do.
Ralston substation	500 kilovolt-amperes.
North Cody substation	2,000 kilovolt-amperes.
Heart Mountain switchyard additions	Switching.
Deshaw	5,000 kilovolta-mperes.
Miscellaneous metering equipment (Missouri-Oahe district).	
Fort Clark substation	750 kilovolt-amperes.
Painted Woods substation	1,000 kilovolt-amperes.
Watford City substation	3,000 kilovolt-amperes.
Irrigation pumping meters (62 units).	
Forsyth substation	3,750 kilovolt-amperes.
Sadie Flat substation	750 kilovolt-amperes.
Future lines and substations	Not determined.

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Sadie Flat tapline	0	Not started.
Big Sandy substation	0	Do.
Meeteetse substation	100	Complete.
Hamilton Dome substation	100	Do.
Muddy Ridge substation	100	Do.
Ralston substation	100	Do.
North Cody substation	100	Do.
Heart Mountain switchyard additions	12	Fiscal year 1954.
Deshaw substation	17	Do.
Miscellaneous metering equipment (Missouri-Oahe District)	100	Complete.
Fort Clark substation	100	Do.
Painted Woods substation	0	Not started.
Watford City substation	67	Fiscal year 1954.
Irrigation Pumping Meters (62 units)	81	Do.
Forsyth substation	100	Complete.
Sadie Flat substation	0	Not started.
Future lines and substations	0	Do.

Initial construction appropriation, fiscal year 1948.

Purpose

This item is for the purpose of providing for the construction of facilities necessary to serve loads of the REA's from existing lines, and also for the construction of electrical facilities for irrigation pumping requirements that cannot be served from main transmission lines to load centers. Irrigation facilities are part of the overall plan of the development of the Missouri River Basin. When funds are provided for construction of irrigation units, the construction of electrical facilities required and the cost of their construction are carried under this item.

METERING EQUIPMENT

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$82,183
Program fiscal year 1954	23,700
Balance to complete	249,117
Total, estimated cost	355,000

Description of facilities

Installation of metering facilities for determining power use by customers.

Status of construction

Meter installations:	
Estimated percent complete 6-30-53	23
Expected completion	(1)

[1] Metering equipment will be installed as customer service requires.

Initial construction appropriation, fiscal year 1952.
Percent total complete, June 30, 1953, 23.

Purpose

This metering equipment is for the purpose of determining the amount of electrical energy delivered to customers of the Bureau in order that the established rate schedules may be applied to this energy and the revenue to be received by the Bureau accurately determined.

GENERAL PROPERTY (ALL OTHER)

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$1,068,227
Program fiscal year 1954	460,000
Balance to complete	2,159,320
Total, estimated cost	3,687,547

Purpose

The funds in general property are for items that are not for the specific benefit of any particular segment of the power system but are necessary for proper, safe, and economical use of all facilities. This item includes such things as radio communication equipment, access roads, warehouse, storage buildings, testing tools, laboratory, shop equipment, and system power dispatching facilities.

FUTURE TRANSMISSION LINES AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$600,601
Program fiscal year 1954	214,920
Balance to complete	58,318,763
Total, estimated cost	59,134,284

Description of facilities

Future lines and substations required for delivery of Missouri River Basin power to market area.

Status of construction

Transmission lines and substations:	
Estimated percent complete June 30, 1953	0
Expected completion	(1)

[1] This work is in the planning stage and no construction appropriations have been made. Each line constructed will bear a portion of this initial investigation expense.

Initial construction appropriation, fiscal year 1950; percent total complete, June 30, 1953, 0 percent.

Purpose

This represents the portion of the total estimated cost of the transmission system applicable to future self-liquidating transmission facilities to make available more firm energy to the area when future load growth warrants such additions. It also includes cost estimates for preliminary surveys, network board analyzer studies, comprehensive cost studies and other planning work in conjunction with the transmission system. The funds expended and programed under this item are for this latter work that is essential to the orderly and economic study of future requirements.

GERING-STERLING 115-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$1,716,952
Program fiscal year 1954	85,248
Balance to complete	158,800
Total, estimated cost	1,961,000

Description of facilities

This line is between Gering, Nebr., and Sterling, Colo.

Gering-Sterling 115-kilovolt line	miles	108
Sidney substation	kilovolt-amperes	10,000
Bridgeport substation	do	1,500

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	90	(1).
Sidney substation	93	(1).
Bridgeport substation	57	Fiscal year 1954.

[1] Minor additions to line and substation required for optimum use of the facilities.

Initial construction appropriation, fiscal year 1948.
Percent total complete, June 30, 1953, 82 percent.

Purpose

The Gering-Sterling transmission line and Sidney substation are essentially complete. The Bridgeport substation now under construction is required to provide service to the town of Bridgeport, Nebr., Service Pipe Line Co., Wheatbelt Electric Membership Association, and Chimney Rock Public Power District.

SEMINOE-WESTVACO 115-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of apropriations

Estimated expenditures through fiscal year 1953	$1,293,418
Program fiscal year 1954	1,370,903
Balance to complete	1,077,679
Total, estimated cost	3,742,000

Description of facilities

This line is between Seminoe switchyard and Westvaco, Wyo.

Seminoe-Westvaco 115-kilovolt line, miles	177
Sinclair substation, kva	6,000
Westvaco substation, kva	15,000

Status of construction

	Estimated percent complete June 30, 1953	Expected completion
Transmission line	39	(1).
Sinclair substation	73	(1).
Westvaco substation	10	Fiscal year 1955.

[1] This line is complete to Sinclair and partial service is being rendered from that substation at the present time.

Initial construction appropriation, fiscal year 1950.
Percent total complete, June 30, 1953, 35 percent.

Purpose

The Congress in fiscal year 1953 appropriated funds for the construction of the Sinclair-Westvaco 115-kilovolt transmission line. The Bureau of Reclamation issued specifications for construction and advertised for bids. The bids were scheduled to have been opened January 20, in accordance with regular procedure so that a contract could be awarded and construction initiated.

On January 8, 1953, Congressman Ben F. Johnson, now chairman of the House of Representatives Subcommittee on Appropriations for the Department of the Interior, wrote the Secretary of the Interior a letter requesting that no contract be awarded until the committee could review the entire problem at the time of the hearings on the 1954 appropriation bill. Accordingly the opening of bids has been deferred until further notice and all bidders have been notified. Apparently the requested delay was on the basis that the Defense Electric Power Administration had not provided some materials priorities for this transmission line.

There is attached a copy of a letter dated March 13 signed by James F. Davenport, Administrator of the Defense Electric Power Administration that states "the Sinclair-Westvaco 115-kilovolt transmission line * * * may be constructed without approval by Defense Electric Power Administration provided all materials are obtained without the use of a preference rating or allotment." The Bureau is able to secure the materials required without the use of a preference rating or allotment and desires to proceed with construction of this line at the earliest possible date.

There is also attached a complete justification for the Sinclair-Westvaco 115-kilovolt transmission line.

MARCH 13, 1953.

DEPA Serial No. 4863–B

Memorandum to: G. W. Lineweaver, Assistant Commissioner, Bureau of Reclamation.

From: James F. Davenport, Administrator, Defense Electric Power Administration.

Subject: Sinclair-Westvaco 115-kilovolt transmission line.

Responsive to a request by Messrs. Taliaferro and Sutter of your office, we wish to advise as follows with respect to approval of critical materials for construction of the subject transmission line:

The Sinclair-Westvaco 115-kilovolt transmission line and substation equipment covered by your DEPA–9 application dated November 19, 1951, may be constructed without approval by Defense Electric Power Administration provided all materials are obtained without the use of a preference rating or allotment. This authority was granted to all electric utilities by Industry Letter No. 65 dated February 20, 1953, copy of which is attached.

JAMES F. DAVENPORT, *Administrator.*

JUSTIFICATION

These features are to supply the increasing demands for electrical energy in southwestern Wyoming. Agencies which will be provided electrical energy include the following:

(*a*) Bridger Valley Electric Association Inc., Unita County, Wyoming.

(*b*) Sublette County Rural Electric Cooperative, whose construction program is at a standstill due to lack of a power supply.

(*c*) Intermountain Chemical Co. at Westvaco, Wyo.

(*d*) Pipeline pumping operations of the Utah Oil Refining Co. at Wamsutter, Granger, Opal, and La Barge, Wyo.

(*e*) Pioneer Pipe Line Co. finished-products line now under construction from Sinclair, Wyo., to Salt Lake City, Utah.

(*f*) Other potential industries which depend upon adequate and reliable power supplies for successful exploitation.

Discussion

Loads on the Bridger Valley REA system, which now operates a 1,680-kilowatt diesel plant, are growing at such a rate that it is necessary for the REA to plan additional capacity if anticipated loads are to be met. Acting upon this necessity, the Bridger Valley REA signed a contract with the Bureau of Reclamation for delivery of electrical energy at the proposed Westvaco substation. A considerable share of the oilfield and pipeline pumping lead is in this REA service area.

The Sublette County Rural Cooperative has not been able to embark upon its

construction program because of inadequate power supply in their area. Their proposed system is being designed on the basis of building a transmission line to the proposed Bureau substation at Rock Springs. Included in their area is a new and spectacular oilfield discovery along the Green River Valley. In the comparatively short time of operation of this oilfield, over 100 pumping oil wells have been brought into operation and more are being drilled.

The Intermountain Chemical Co. at Westvaco, approximately 15 miles from Green River, Wyo., produces a product called Trona, otherwise known as soda ash or sodium sesquicarbonate. This material is widely used in industry, particularly in the manufacture of aluminum, detergents, and glass. Compared to the synthesized product, the natural product obtained at Westvaco is sufficiently lower in cost and available in adequate quantities that virtually the entire requirements for the country soon will come from this source. For this reason the demand for electrical energy at Westvaco is expected to increase materially in the fairly near future. Lack of adequate electrical energy in the area is evidenced by the construction at Westvaco of an 8,000-kilowatt gas-burning fuel-electric plant by the Intermountain Chemical Co. even though they now are served on an interim basis from an outside source. Energy deficits will increase accordingly as production is expanded at the chemical plant. Power requirements will increase in integral multiples of present demand, the first stage of which is shown on the accompanying tabulation.

A number of pipeline pumping stations are scattered over the area. Within easy reach of present distribution systems are stations totaling over 3,000 horsepower, which plants would require 21,600-kilowatt-hours of electrical energy per year. Most operating pipeline pumping stations employ internal combustion engines. These engines are quite old, in most cases moved in from other pumping plants which have been electrified. Consequently, they are subject to frequent breakdowns resulting in curtailed output of the pumping plants and excessive maintenance. The Sinclair-Westvaco line will provide enough power to make possible the electrification of the pipeline pumping operations listed in the attached table.

A finished-products pipeline running from Sinclair, Wyo., to Salt Lake City, Utah, now is under construction by the Pioneer Pipe Line Co. Pumping stations for this line are proposed at Sinclair and Green River, Wyo., with an installed capacity of 800-horsepower proposed for the latter station.

As shown by the table, the Rock Springs-Westvaco area and the rural cooperative areas will experience shortages of electrical power and energy unless additional sources are made available. The Sinclair-Westvaco line and associated substations will supply these energy deficiencies as well as provide for further load growth.

The following tabulation shows the anticipated loads cataloged by wholesale customers' systems which include the loads discussed above. Loads in kilowatt are estimated for December 1960. All data are based on normally experienced load growth during period 1954–1960, except for estimated industrial load, which is based upon information given during conferences with officials of companies involved as reported in letter from region dated August 17, 1951.

Electrical loads and supply, 1960

System	Load		Annual kilowatt-hours	Supply		Surplus (+) or deficit (−)	
	Type	Kilowatts		Kilowatts	Kilowatt-hours	Kilowatts	Annual kilowatt-hours
Bridger	Rural	1,300	5,694,000				
Valley REA	Pipeline	3,300	24,700,000				
Total		4,600	29,394,000	1,680	7,400,000	−2,920	−21,994,000
Sublette	Rural	850	3,700,000				
	Pipeline	200	1,400,000				
	Oilfield	360	2,400,000				
Total		1,410	7,500,000	0	0	−1,410	−7,500,000
Utah Oil (Wamsutter)	Pipeline	2,600	18,200,000	0	0	−2,600	−18,200,000
Pioneer	do	900	6,300,000	0	0	−900	−6,300,000
Inter-Mountain	Industrial	20,000	122,600,000	8,000	39,000,000	−12,000	−83,600,000
Area totals		29,510	183,994,000	9,680	46,400,000	−19,830	−137,594,000

The following tabulation shows the anticipated loads cataloged by wholesale customer systems which include the loads discussed above. Loads in kilowatts are estimated for December 1954, the date the Sinclair-Westvaco line would be placed in service.

Electrical loads and supply, 1954

System	Load		Annual kilowatt-hours	Supply		Surplus (+) or deficit (−)	
	Type	Kilowatts		Kilowatts	Kilowatt-hours	Kilowatts	Annual kilowatt-hours
Bridger	Rural	940	4,104,000				
Valley REA	Pipeline	3,000	21,600,000				
Total		3,940	25,704,000	1,680	7,400,000	−2,260	−18,304,000
Sublette	Rural	600	1,840,000				
REA	Pipeline	160	1,121,000				
	Oilfield	330	2,177,000				
Total		1,090	5,138,000	0	0	−1,090	−5,138,000
Utah Oil (Wamsutter)	Pipeline	2,400	16,800,000	0	0	−2,400	−16,800,000
Pioneer	Pipeline	800	5,600,000	0	0	−800	−5,600,000
Intermountain [1]	Industrial	6,000	37,000,000	8,000	39,000,000	+2,000	+2,000,000
Area totals		14,230	90,242,000	9,680	46,400,000	−4,550	−43,842,000

[1] Figures given for surplus kilowatts and kilowatt-hours are estimates only. Actual available amounts, if any, will depend upon plant requirements for process steam.

SEMINOE-WESTVACO 115-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Mr. JENSEN. 1. Is it true the North Platte District has notified REA's served by them that they (the Bureau) will be unable to meet REA requirements after 1956?

Mr. MCPHAIL. We estimate that the power available from present hydro plants plus those now under construction will be able to carry the loads on the western division, Missouri River Basin project, including the loads in the southwestern Wyoming area, through 1957. This possibly could be extended through 1958, depending on the rate of growth of load, water conditions, and our continued ability to obtain offpeak energy from present thermal sources to firm up our hydro power. The REA's have been notified of this circumstance and initiated their engineering study on this basis.

Mr. JENSEN. 2. As a result of this notification have not the REA's, some 23 in number, provided a fund to have an engineering study made of potential steam-plant sites?

Mr. MCPHAIL. Yes, sir. A preliminary study has been completed. The REA's are now working with us to arrive at the most economical site for a steam plant and to determine the plant capacity that would best integrate steam-electric production with our hydro system.

Mr. JENSEN. 3. If a shortage of power is impending in the immediate future, why is the Bureau seeking to increase their contractual obligations for the delivery of power they will be unable to meet?

Mr. MCPHAIL. On the basis of requests for power by REA's in the area and in view of the interest shown by the Wyoming Natural Resources Board, the Bureau considers that a load ample to justify the line could be developed. The load could be carried by the Colorado-Big Thompson project through 1957 and possibly 1958. It is planned that the Glendo-Fremont Canyon development would be developed in time to carry the load a year or two longer, by which time the Colorado River storage project would be in operation and ready to serve the area. The line would then form a valuable tie for the interchange of power between the Colorado River storage project and the western division of the Missouri River Basin project.

Mr. JENSEN. 4. How much energy will be delivered over this line to areas not now being served and to whom will such energy be furnished?

Mr. McPHAIL. As presently scheduled the line would go into service early in 1950. The following estimated loads would be served:

	Millions of kilowatt-hours per year	
	1956	1960
Wamsutter, Wyo., pipeline pumps served through Rawlings Electric Co.	14.0	14.0
Utah Oil Co. pipeline pumps served through Bridger Valley REA	21.0	22.0
Bridger Valley REA, rural load	4.5	6.4
Sublette REA	8.85	11.46
Total	48.35	53.86

Bridger Valley REA has a small Diesel plant which will not be able to meet normal rural loads beyond 1955 and in no case could it serve the Utah Oil Co. pipeline pumps. No existing sources could serve the above loads.

Mr. JENSEN. 5. Do you consider the number of people to be served and kilowatt-hours to be supplied justify the expenditure required?

Mr. McPHAIL. Yes; particularly in view of the potentialities for development of this area in Wyoming which, though very rich in many strategically important minerals, is virtually unexploited and without adequate power service facilities.

Mr. JENSEN. 6. Cannot loads contemplated be served by some other means from existing sources?

Mr. McPHAIL. We have been advised by the potential customers in southwestern Wyoming and our investigations verify that there is not sufficient power-generating facilities in the area to serve the anticipated loads.

Mr. JENSEN. 7. Is not this costly line with practically no potential customers, duplicating service now available from others, a sheer waste of taxpayers' money?

Mr. McPHAIL. This line is not a duplication of existing facilities in any way. Additional power must be made available to the area if orderly progress and development is to be made in the area. This line would be a sound investment and a great benefit to the well-being of the people in the area.

ALCOVA-GERING 115-KV TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$545,194
Program, fiscal year 1954	800,000
Balance to complete	2,607,806
Total estimated cost	3,953,000

Description of facilities

This line is between Alcova switchyard and Gering, Nebr.
Alcova-Gering 115-kilovolt line, 145 miles.
Cheyenne substation switching additions.
Alcova switchyard.

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	0	Fiscal year 1956.
Cheyenne substation switching additions	0	Do.
Alcova switchyard	51	Do.

Initial construction appropriation, fiscal year 1950.
Percent total complete, June 30, 1953, 14 percent.

Purpose

This line is required to insure adequate transmission capacity between the generation and load centers and continuity of service, secure greater flexibility of operation, provide greater dependability of electrical service, increase system operating efficiency, and maintain system stability on the larger total system.

Voltage levels at the load centers are entirely dependent upon support from the Beaver Creek synchronous condenser if the Alcova-Gering line is not in service. This condenser is 145 miles removed from southeastern Wyoming and western Nebraska load centers. Loss of the machine or loss of any section of the Gering-Beaver Creek line will cause dropping of loads in this area unless the Alcova-Gering line is built.

CASPER-GERING 115-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$2,723,010
Program, fiscal year 1954	635,000
Balance to complete	1,115,990
Total estimated cost	4,474,000

Description of facilities

This line is between Casper, Wyo., and Gering, Nebr.

Casper-Gering 115-kilovolt line, 174 miles.
Gering substation additions, 10,000 kilovolt-amperes.
Guernsey substation, 10,000 kilovolt-amperes.
Glendo substation, switching.

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	93	Fiscal year 1955.
Gering substation additions	44	Do.
Guernsey substation	23	Do.
Glendo substation	13	Fiscal year 1956.

Initial construction appropriation, fiscal year 1949.
Percent total complete, June 30, 1953, 61 percent.

Purpose

This transmission line and associated substations are in service with the exception of the Glendo substation. The fiscal year 1954 program is required for the continuation of the Gering substation additions, preparation of designs and specifications, procurement of equipment, and award of construction contracts for the Glendo substation, and procurement of electrical equipment for Guernsey substation. These facilities are required for system stability and for increase in customer power requirements.

GLENDO-LUSK 34.5-KILOVOLT TRANSMISSION LINE AND SUBSTATIONS

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$257,857
Program, fiscal year 1954	148,333
Balance to complete	28,810
Total, estimated cost	435,000

Description of facilities

This line is between Glendo substation and Lusk, Wyo.

Glendo-Lusk 34.5-kilovolt line, 40 miles.
Lusk substation, 1,500 kilovolt-amperes.

Status of construction

	Estimated percent complete, June 30, 1953	Expected completion
Transmission line	73	Fiscal year 1955.
Lusk substation	46	Do.

Initial construction appropriation, fiscal year 1948.
Percent total complete, June 30, 1953, 59 percent.

Purpose

In fiscal year 1953 the Congress appropriated money for the construction of an addition to the existing Glendo-Lusk 34.5-kilovolt transmission line from Manville to Lance Creek to serve the Niobrara Electric Membership Association. Subsequent to the presentation of this budget to the Congress a new load study of the area to be served was completed. Additional loads to be met along the existing Glendo-Lusk transmission line in the next year would overload the line to a point where transmission losses would be extremely high, since the Niobrara Electric Membership Association (REA) is now agreeable to taking their entire requirements at Lusk, it is to the Bureau's advantage to eliminate the Manville-Lance Creek line and associated substations and convert the existing Glendo-Lusk transmission line from 34.5 to 69 kilovolts. This will provide adequate service to the same area as the Manville-Lance Creek line would have served. Operating costs under this plan will be reduced as the Bureau will not have the operation of the line to Lance Creek (20 miles) and the Lance Creek substation. In addition, the conversion of the existing 34.5-kilovolt Glendo-Lusk transmission line to 69 kilovolts, to serve this area, will result in savings to the Bureau in losses of approximately 937,000 kilowatt-hours which may be evaluated at $5,154 yearly savings by applying the average rate of 5.5 mills per kilowatt-hour.

This conversion of the existing Glendo-Lusk 34.5-kilovolt transmission line to 69 kilovolts required the conversion of the Glendo and Lusk substations to 69 kilovolts. Also, since the loads to be served are of greater magnitude, it will be necessary to enlarge these substations.

GENERAL PROPERTY

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$234,976
Program, fiscal year 1954	130,000
Balance to complete	40,024
Total, estimated cost	435,000

Purpose

The funds in general property are for items that are not for the specific benefit of any particular segment of the power system but are necessary for proper, safe and economical use of all facilities. This item includes such things as radio communication equipment, access roads, warehouse, storage buildings, testing tools, and laboratory.

Sioux City-Omaha 230-Kilovolt Transmission Line and Substation

Estimate of appropriations

Estimated expenditures through fiscal year 1953	None
Program, fiscal year 1954	$462,000
Balance to complete	7,040,000
Total, estimated cost	7,502,000

Description of facilities

This line is between Sioux City, Iowa, and Omaha, Nebr.
Sioux City-Omaha 230-kilovolt line, 107 miles.
Omaha substation, 150,000 kilovolt-amperes.

Status of construction

This line and associated substation is not presently under construction but it is proposed to start construction in fiscal year 1954 and complete in fiscal year 1957.
Initial construction appropriation, fiscal year 1954.
Percent total complete, June 30, 1953, 0 percent.

Purpose

This 230-kilovolt transmission line is an integral part of the transmission system necessary to supply power to customers in the Omaha and eastern areas of Nebraska. This transmission line will transmit power to Omaha and its terminus at this point will also serve as the point from which power will be transmitted at lower voltages to serve other load centers. The Omaha area is served by Omaha Public Power District. The city of Omaha constitutes the largest urban and industrial center of the Upper Missouri River Basin. A contract has been approved by the board of control of the Omaha Public Power District and is now before the Secretary of the Interior for approval. The initial production of power at Fort Randall is scheduled to begin in November 1953, and full power from all generating units will be available in 1955. It is essential that funds be provided in fiscal year 1954 in order that this line can be completed at the earliest possible date to supply power to the Omaha district as well as the Nebraska Public Power System, which will also receive power at Omaha.

Gavins Point-Belden 115-KV Transmission Line

Estimate of appropriations

Estimated expenditures through fiscal year 1953	0
Program, fiscal year 1954	$575,000
Balance to complete	25,000
Total, estimated cost	600,000

Description of facilities

This line is between Gavins Point switchyard and Belden, Nebr.
Gavins Point-Belden 115-kilovolt line, 40 miles.
Temporary tie line, 2 miles.

Status of construction

This line is not presently under construction but it is proposed to start construction in fiscal year 1954 and complete in fiscal year 1955.
Initial construction appropriations, fiscal year 1954.
Percent total complete, June 30, 1953, 0 percent.

Purpose

This line will be used to supply Missouri River Basin project power to the Nebraska Public Power system and to other customers in Nebraska through wheeling.

NEBRASKA AND NORTHWESTERN IOWA METERING EQUIPMENT

Estimate of appropriations

Estimated expenditures through fiscal year 1953	$10,000
Program, fiscal year 1954	35,000
Balance to complete	145,000
Total, estimated cost	190,000

Purpose

This metering equipment is required to properly account for the sale of Missouri River Basin power in this market area. The amounts allocated each year for this purpose are based on market requirement presently anticipated.

There will be witnesses from most of these areas, both those that are for and against the construction of these proposed new lines. With your statement and their testimony this committee will have the responsibility, of course, of deciding what will be done in every instance.

Now, Mr. Budge, I believe you wanted to make a statement.

Mr. BUDGE. Yes, Mr. Chairman, I have a couple of items that I would like to inquire into for just a few minutes, if I could have the committee's indulgence.

ACQUIREMENT OF PROPERTY ON JACKSON LAKE

Mr. Lineweaver, is there any money in this budget that is intended to acquire any property on Jackson Lake?

Mr. LINEWEAVER. Mr. Eaton.

Mr. EATON. Probably the matter you have in mind in the Berol property. There is no money in this budget, Mr. Budge, to acquire property owned by Mr. Berol. The money to acquire an easement on this property was obtained in the 1953 appropriation.

The property abuts right on Jackson Lake where there is a high earth bluff, where we have to get money from the water users each year in substantial amounts to do protective and maintenance work because of the erosion.

We have sought to stop that kind of expenditure by making a cash settlement with Mr. Berol.

I can report to you that he was in the Department this past week and conferred with Secretary McKay and Assistant Secretary Aandahl on this matter, and he has tentatively agreed to give us an easement after he sees the form of the easement, possibly without any cost. So, I am not sure that expenditure will be necessary after we present the proposed easement to him.

Mr. BUDGE. In your 1953 justification, did you justify the acquisition of an interest in land, whether it is a title in fee, or just an easement?

Mr. EATON. It does not go into that detail. It just says rights-of-way purchase on Jackson Lake. That is the item. It does not describe it in detail. For that reason this committee would not have had specific information last year before it on that case.

Mr. BUDGE. Thank you.

Mr. EATON. I think we can report to you a conclusion of the whole transaction in a very short time.

Mr. BUDGE. Fine.

YELLOWTAIL UNIT

Mr. BUDGE. Now, I have been going over the justification of the Yellowtail unit of the Missouri River Basin project.

From the statement contained in the justification this would appear to be a very worthwhile project, and I am not questioning the feasibility or nonfeasibility of it.

Mr. Lineweaver, in your interpretation in the Bureau do you consider transmission lines to be included within the word "reclamation" as it is used in the law?

Mr. LINEWEAVER. You are speaking now of the Missouri Basin particularly?

Mr. BUDGE. Yes, sir.

Mr. LINEWEAVER. Our interpretation over the years has been confirmed by the Congress through the appropriation process that transmission lines are necessary to market power produced at not only projects or dams built by the Bureau, but also those built by the Corps of Engineers in connection with the Missouri Basin project.

Mr. BUDGE. Now, how much have you expended on the Yellowtail unit?

Mr. LINEWEAVER. Nothing for construction.

We have done a great deal of investigation.

As of June 30, last, we had spent a total of $2,094,878 in connection with investigations, dam-site explorations, and preparation of plans, and so forth on the Yellowtail unit.

Mr. BUDGE. How much have you expended on the transmission line that goes from Lovell up to where you propose to build the dam?

Mr. LINEWEAVER. That is in the transmission division; that is handled as part of the transmission division rather than as part of the Yellowtail unit.

Mr. BUDGE. But there should be some coordination between the two.

Mr. LINEWEAVER. That is right, there is.

Mr. MCPHAIL. Up to June 30, 1952, Mr. Budge, there has been expended $80,509.

Mr. BUDGE. How much do you have scheduled to spend in 1953?

Mr. MCPHAIL. In 1953 there was scheduled to be spent $809,491.

Mr. BUDGE. The correct figure is $890,000; is it not?

Mr. MCPHAIL. My book shows $809,491.

Mr. BUDGE. That is correct; I beg your pardon.

How much has been expended in the building of the camp out at the site of the dam, and when was it built?

Mr. MARKWELL. For temporary camps, Mr. Budge, the amount is $287,000. That does not include such items as rights-of-way or access roads. That is on the temporary camps themselves.

Mr. BUDGE. How much did the rights-of-way and the access roads cost in addition to the $287,000 item?

Mr. MARKWELL. For access roads I have $43,564, and for the rights-of-way, which I am not sure are only for access roads or for camps, but the total amount of money spent for rights-of-way so far is $18,054.

Mr. BUDGE. I did not get that last figure; pardon me.

Mr. MARKWELL. $18,000 in round figures.

Mr. BUDGE. Does this campsite and the transmission line lay on the Crow Indian Reservation?

Mr. MARKWELL. The damsite itself is on the reservation. I am sorry I cannot tell you about the campsite, but I will find out and put that in the record for you.

Mr. BUDGE. What about the transmission line?

Mr. MCPHAIL. I understand the portion of the transmission line that has been constructed does not lay on the Indian reservation, but there is about a 4-mile gap between the end of the line and the Yellowtail powerhouse site that would be on the reservation.

Mr. MARKWELL. I might add, Mr. Budge, that the transmission line does go across lands owned by individual Indians, in some cases, but it is not tribal land.

Mr. BUDGE. Does the line that you have constructed follow the original line which you intended to construct, or have you rerouted the line?

Mr. MARKWELL. There has been a slight change of just a few miles in the route because of the Indian land situation there, but otherwise, it follows the route we always had in mind.

Mr. BUDGE. When you get up to the Indian land, what do you do? Build around it?

Mr. MARKWELL. Build alongside of it for a short distance of 2 or 3 miles, although I cannot state that accurately at this time.

Mr. BUDGE. The authorizing act here, section 9 of the act of June 28, 1946, provides as follows:

> No further construction work on the Crow Indian Reservation shall be undertaken by the United States without the prior consent of (1) the Crow Tribe, (2) the irrigation district or districts affected and (3) the Congress of the United States. * * * The consent of the Crow Tribe shall be obtained by a majority vote of the General Council of the Tribe, expressed at a duly convened meeting.

Does the Bureau of Reclamation, or the Department of the Interior have the consent of the Crow Tribe, the irrigation districts, or districts affected, and the Congress for this construction?

Mr. MARKWELL. We do not have the consent—at least, up until 2 or 3 weeks ago, certainly—of the Crow Tribe, nor the Indian irrigation districts.

Mr. BUDGE. Do you have the consent of the Congress?

Mr. MARKWELL. In this way, sir, that at one time Yellowtail was put in Phase "A"—that is the construction phase of the Missouri Basin—but funds were not appropriated for actual construction. The project itself was authorized by the Congress.

Mr. BUDGE. Mr. Chairman, it would appear to me in this instance that a great deal of money has been expended by the Bureau, totaling well over $3 million, I would take it, when the requisites of the act have not been met, and I do not believe that you have the consent of the Congress of the United States, as provided for in the act, and I am satisfied that you do not have the consent of the Crow Tribe or of any irrigation district, or districts, affected.

Mr. MARKWELL. Mr. Budge, this might serve to clarify the situation. The Yellowtail Dam was specifically authorized under the Flood Control Act of 1944 by the Congress.

Mr. BUDGE. But this act is later and it provides that you shall get the consent of the Congress before you do any further construction work, and Mr. Lineweaver said that the transmission line was considered as reclamation, as is covered in the act.

Mr. MARKWELL. That particular transmission line, as you can see, Mr. Budge, from the map, will also form an intertie with the Montana Power Co. at Billings. It is a dual-purpose line that forms the intertie between the system you see in yellow to the south and the Montana Power Co. at the north.

Mr. BUDGE. Of course, if that were being done, you could build it in a more direct manner than that, if the purpose of the line was for an intertie.

Let me ask you this question: The line which has been constructed and which you show on the map in blue, is intended to service the contractors in the construction of the Yellowtail Dam; is it not?

Mr. MARKWELL. Not entirely. It really has three purposes. One is, of course, construction power, another is to take the power out of Yellowtail when it is constructed, and the third is to form a portion of the intertie between the Montana Power system on the north and the Bureau system on the south.

Mr. BUDGE. How do you justify having spent over $3 million here, in the face of this language in the act that says no further construction work shall proceed until you have obtained these three permits?

Mr. LINEWEAVER. May I ask what law that is? Will you give me the citation?

Mr. BUDGE. That is section 9 of the act of June 28, 1946.

Mr. LINEWEAVER. That is the Crow Indian legislation.

Mr. MARKWELL. Mr. Budge, the work which has been done is what we call preconstruction work. The dam site has been very thoroughly investigated, but I would not call that construction work.

Mr. BUDGE. Would you call building a campsite at the site of the dam and the building of a transmission line to furnish power for the construction of the dam preconstruction work?

Mr. MARKWELL. I have not been there in several years, but the campsites, as I recall, are some distance down the canyon and out in the flat.

Mr. BUDGE. How many years ago was this built?

Mr. MARKWELL. We thought we were going to undertake it—I believe it was 1947, when it came up first.

Mr. LINEWEAVER. I would like to check on it, but my recollection is that the campsite was leased from the Crow Tribe—I would like to check on that to make sure.

Mr. BUDGE. What I do not understand, Mr. Lineweaver, is the building of this transmission line and the installation of a campsite, both of which are for the purpose of constructing what may be a very excellent project, but I cannot understand why this construction work has gone forward in view of the absolute prohibitions contained in this act of June 28, 1946. I would like an explanation of that placed in the record.

Mr. MARKWELL. I think I can clear up that campsite thing right now, Mr. Budge, and that is this: The amount spent for campsites is for a temporary campsite for the investigating crews. Yellowtail is to be a very high dam and it requires very extensive investigations. There is no other habitation around there, and rather than transport our men 40 or 50 miles, it was felt that the campsite would be more economical for the Government. There has been no construction, as such, undertaken.

Mr. BUDGE. What do you call this transmission line?

Mr. MARKWELL. The transmission line, even if Yellowtail is never built, will serve as an interconnecting line with the Montana Power Co. for the mutual exchange of power between the power company and our system to the south.

Mr. BUDGE. If you were going to make an intertie between Lovell and Billings, this is certainly a long way to go around. It is almost a 90-degree angle.

Mr. MARKWELL. I think the topography had something to do with it, but certainly we would be a bit remiss if we did not take into consideration that particular authorized dam site in locating the transmission line where we could conveniently reach the dam site.

Mr. LINEWEAVER. Mr. Budge, we will present the facts as we find them. I may say that the Lovell-Yellowtail line and the Yellowtail-Billings line were presented to the Congress at each session and both committees left this line in.

Mr. BUDGE. We can all tell from looking at the map, when you go from Lovell to Yellowtail and then to Billings, you make almost a 90-degree angle and turn the corner and that is not the usual way, certainly of building an interconnecting line between Lovell and Billings.

Mr. MARKWELL. No, sir. It was conceived to serve three purposes, Mr. Budge.

Mr. BUDGE. I would appreciate it if the Bureau would place a statement in the record as to just how it justifies the expenditures of these moneys, in view of the prohibitions contained in the act to which I have referred.

I am not quarreling at all over the facts as to whether or not this is a good project. I am rather inclined to believe it is, but it seems to me that the Bureau has been somewhat premature in view of the language contained in that prohibition clause in the act, passed by the Congress on June 28, 1946, and I would like the full explanation.

Mr. LINEWEAVER. Very well, we will present that statement for the record and see that you get a copy of it.

(The information follows:)

YELLOWTAIL UNIT—STATEMENT OF CONSTRUCTION ON CROW INDIAN LANDS

The Bureau has constructed a temporary camp for exploration and investigative work on Crow tribal lands at the site of Yellowtail Dam.

Under the act of June 28, 1946 (60 Stat. 333–336) permission was obtained from the Crow Tribal Council on December 13, 1946 in the form of a resolution passed by the council 78 to 62 granting consent to the United States to enter upon Crow tribal lands for the purpose of investigations and surveys in connection with Yellowtail Dam. When and if agreement is reached and funds are appropriated to build Yellowtail Dam, the buildings will be incorporated in a construction camp. Otherwise they are capable of being removed at small cost.

A right-of-way for the Lovell-Yellowtail transmission line over allotted Indian lands was granted by the superintendent on June 23, 1952, and on March 26, 1953, pursuant to act of February 5, 1948 (62 Stat. 17) and departmental regulation 25 C. F. R. 256 as amended August 10, 1951. This is a 115-kilovolt line from Lovell to Billings via the dam site. The Lovell-Yellowtail section is now under construction at an estimated cost of $890,000 and work completed to February 28, 1953, amounted to $455,771.

The route from Lovell to Billings via Yellowtail is approximately 91 miles as opposed to a direct route of about 75 miles. However, the direct route is over difficult mountain terrain that would entail high costs for both construction and operation and maintenance. It is doubtful if any appreciable savings could be realized from a more direct route. The line serves a dual purpose of delivering

power to the Big Horn area from sources such as Canyon Ferry, Fort Peck, and plants of the Montana Power Co., and to provide an outlet for Yellowtail powerplant when constructed. The Yellowtail powerplant is authorized, designs and specifications are well advanced and construction can proceed at any time pending appropriations and the settlement of Indian rights. The Bureau has proposed the construction of the Yellowtail unit since 1947, and while delayed because of budgetary limitations, it naturally has governed the location of transmission facilities. The construction of Yellowtail unit and the Yellowtail-Billings section of the line will complete the adopted plan and be a tremendously important addition to the power resources of the area.

The Secretary of the Interior asked the advice of the Solicitor of the Department of the Interior on the construction of a transmission line across Crow tribal lands to the Yellowtail Dam site. On September 10, 1952, Acting Solicitor Flanery advised that there was no legal objection to the construction. He referred specifically to the act of June 28, 1946, concluding that "the construction work referred to in this act is obviously irrigation construction work, and not construction work in connection with the construction of a transmission line." A copy of Mr. Flanery's opinion follows:

DEPARTMENT OF THE INTERIOR,
Office of the Solicitor,
Washington 25, D. C., September 10, 1952.

Memorandum to: Secretary of the Interior.
From: Acting Solicitor.
Subject: Right-of-way for transmission line across Crow tribal lands to Yellowtail dam site.

The Bureau of Reclamation proposes that the Department approve, in connection with the construction of a transmission line from Lovell, Wyo., to the Yellowtail dam site, a grant of a right-of-way across tribal lands of the Crow Indian Reservation, although the Crow tribe refuses to consent to the grant, and section 3 of the regulations approved on August 10, 1951 (25 C. F. R. 1951 Supp. Part 256) provides that no right-of-way shall be granted across tribal lands without the prior consent of the tribal council. The Bureau of Reclamation takes the position that the consent of the tribe is not necessary under the act of February 5, 1948 (62 Stat. 17, 25 U. S. C., 1946 ed., sec. 323 et seq.), which would be the authority for the grant of the right-of-way, and recommends, therefore, that the regulation be waived, and that the right-of-way be approved.

The Bureau of Indian Affairs objects to the grant of the right-of-way on the grounds that (1) the Indians have not consented thereto; (2) the consent of the Indians is required by section 9 of the act of June 28, 1946 (60 Stat. 333, 336), and (3) there is no immediate need for the transmission line which would be constructed across the right-of-way, since the Yellowtail dam site itself has not yet been acquired from the Crow Tribe, and such acquisition is necessary before construction of the dam may be commenced.

It is my opinion that there is ample authority under the act of February 5, 1948, to grant the right-of-way, notwithstanding the lack of Indian consent. Such consent is not necessary unless required by the act of Congress authorizing the grant of a right-of-way, and traditionally tribal consent had not been required by Congress in authorizing the grant by the Secretary of the Interior of various rights-of-way (see 25 U. S. C., 1946 ed., secs. 311–22). The 1948 act requires the consent of the tribe only if it has organized under the Indian reorganization Act of June 18, 1934 (48 Stat. 984) on related legislation and, in view of the wide powers of Congress over the management of Indian tribal property, the necessity of securing tribal consent cannot be read into the statute by implication.

It is also my opinion that a requirement of consent to the grant of a right-of-way across Crow tribal lands cannot be deduced from the provision of section 9 of the act of June 28, 1946, supra. This act deals solely with adjustments covering the Crow irrigation project, and provides merely that no further construction work shall be undertaken by the United States on the Crow Indian Reservation without the consent of the Crow Tribe, and the irrigation districts concerned. The "construction work" referred to in this act is obviously irrigation construction work, and not construction work in connection with the construction of a transmission line.

It is, thus, my conclusions that there is no legal obstacle to the grant of the requested right-of-way without the consent of the Crow Tribe. The question whether the grant should be made without tribal consent is one for administrative determination.

W. H. FLANNERY, *Acting Solicitor.*

OPERATION AND MAINTENANCE

MISCELLANEOUS PROJECTS

Mr. JENSEN. Please put in the record a statement on operation and maintenance for other projects which we might have missed in going through this hearing.

Mr. LINEWEAVER. Yes, sir, we will precede those with a general statement on Operation and Maintenance.

(The material requested follows:)

OPERATION AND MAINTENANCE

GENERAL STATEMENT

During fiscal year 1954 there will be 75 Federal reclamation projects, or divisions of projects, which must be properly maintained and operated to provide essential irrigation and power service to extensive areas throughout the West. This number includes both Bureau- and water-user-operated projects, including the Missouri River Basin project as one project, 16 units of which will be completed or partially completed and in an operation status during fiscal year 1954. It is exclusive of the Fort Peck project transmission system, operation of which is financed from a revolving fund.

The Bureau of Reclamation encourages water users to take over operation and maintenance of their irrigation distribution systems as soon as they are prepared to assume this responsibility. In pursuance of this policy, operation and maintenance of the Owyhee project, in Oregon, was transferred to the water users on January 1, 1952, the All-American Canal diversion works and the desilting basins at Imperial Dam, along with the remaining portion of the All-American Canal, were transferred to the Imperial Irrigation District on May 1, 1952, and the W. C. Austin project, in Oklahoma, was transferred to the Lugert-Altus Irrigation District on October 1, 1952, bringing to 61 the total number of projects, or divisions of projects, that are operated and maintained by water users' organizations.

Drafts of contracts are being prepared to turn over operation and maintenance of the Orland and Cachuma projects in California to the water users. In each case, the water users' organizations have expressed themselves as being in favor of the proposal. The Bureau of Reclamation anticipates approval of contracts for these transfers in time for them to be made effective on January 1, 1954.

Contracts with the irrigation districts for transfer of operation and maintenance generally provide for retention of the storage dams and reservoir systems for operation by the Bureau of Reclamation. The Bureau also operates and maintains power generation and transmission facilities.

There are 37 projects or divisions of projects that will be operated in whole or in part by the Bureau of Reclamation during fiscal year 1953 with appropriated operation and maintenance funds or with trust funds advanced by the water users. The total estimate of operation and maintenance funds required amounts to $27,035,183. The total appropriation requested, however, is $24,800,000, since $2,235,183 will be trust funds paid in advance by water users. Of the total appropriation requested, $16,402,403 will be required for operation and maintenance of power facilities and will be repaid to the Treasury from power revenues; $6,337,684 and $192,495 will be required for operation and maintenance of irrigation facilities and municipal and industrial water supply facilities, respectively, and will be repaid by the water users; $412,601 will be required for flood control and other multiple-purpose operations; $1,425,000 will be required for the lower Colorado River front work and levee system; $920,000 will be required for the Bureau's soil and moisture conservation operations; and $800,000 will be required for cooperation with the Department of Agriculture. The last four items are nonreimbursable. An appropriation of $525,000 will also be required for the operation of Boulder City, Nev.

Under its program of irrigation operations, the Bureau of Reclamation will provide, with appropriated operation and maintenance funds and water-user advanced trust funds, for the operation and maintenance of irrigation, municipal water supply, and other multiple-purpose facilities, other than power, on 33 completed projects or divisions of projects. It will also provide for operation and maintenance of the lower Colorado River front work and levee system, for continuance of soil and moisture conservation operations for cooperative program with the Department of Agriculture, and for operation of the municipality of Boulder City, Nev.

The fiscal year 1954 estimate for all multiple-purpose project operations, other than power, of $6,942,780 is $695,441 greater than for fiscal year 1953. These figures include funds advanced by the water users. The increase is required to provide for new projects or units of projects being completed under the construction program and to meet added costs of continuing adequate operation and maintenance, replacements, and improvements on the older projects.

On all Federal reclamation projects, including the Missouri River Basin, irrigation facilities will be capable of supplying water to a total of approximately 7,220,000 acres in fiscal year 1954, an increase of approximately a quarter of a million acres over 1953. The irrigation facilities completed and in operation on all Federal reclamation projects will include 127 storage dams, 80 diversion dams, 388 pumping plants, 19,440 miles of canals and laterals, 5,665 miles of drains, 1,585 miles of telephone lines, and approximately 11,000 miles of operating and patrol roads.

REHABILITATION AND BETTERMENT

Under the Bureau's program of Rehabilitation and Betterment, we are continuing to catch up on some long-deferred maintenance on older projects. At the same time, special attention is being paid to current maintenance requirements on all projects in order to keep them at the highest possible operating efficiency.

The act of June 28, 1946, authorized annual appropriations to defray the cost of (*a*) operating and maintaining the Colorado River front-work and levee system in Arizona, Nevada, and California; (*b*) constructing, improving, extending, operating, and maintaining the protection and drainage works and systems along the Colorado River; (*c*) controlling said river, and improving, modifying, straightening, and rectifying the channel thereof; and (*d*) conducting investigations and studies in connection therewith.

Operation and maintenance activities under the provision of that act extend along the Lower Colorado River from Lee Ferry to the Mexican border, a river distance of 700 miles. The work program for fiscal year 1954, for which $1,425,000 is requested, includes continued surveys and investigations, channelization by means of dredging, maintenance of river-control installations, and replacements and improvements of facilities and equipment.

An appropriation of $920,000 is requested to continued soil- and moisture-conservation operations on public lands under the Bureau's jurisdiction. This is an increase of $86,900 over the fiscal year 1953 appropriation.

SOIL AND MOISTURE CONSERVATION

The Bureau's Soil and Moisture Conservation operations are particularly important, not only because of benefits to public lands resulting from prevention and control of soil erosion but also in connection with the prevention of sedimentation or reservoirs and the protection of water-distribution systems above reclamation projects, around which has developed a major part of the agricultural economy of the Western States.

Funds requested for the operation of Boulder City, Nev., in the amount of $525,000, represent a minimum figure with which the Bureau of Reclamation can meet its responsibilities to that municipality. This amount is $65,000 less than was appropriated for the same purpose last year.

Many other functions are included in the work of operation and maintenance. They include negotiation and administration of new and amendatory repayment contracts, establishment and supervision of development farms, investigations in connection with sprinkler irrigation, inspection of structures and distribution systems, investigations and rectification of drainage problems, weed-control activities, and cooperation with agencies of the Department of Agriculture and of the States and with State colleges.

Operation and maintenance responsibilities also extend to projects under construction, where irrigation water may be delivered to portions of a project, and include matters pertaining to the selection and classification of irrigable lands, layout of farm units, opening of public lands to entry, and selection of and assistance to settlers.

Included in the operation and maintenance budget for the first time as a separate item is a request for nonreimbursable funds for transfer to the Department of Agriculture as required to provide for such items as needed research in soil and water relationships and weed control, and for assistance to new settlers on problems of land development, irrigation practices, and cropping programs.

This item will supplement appropriations previously made to the Department of Agriculture to finance its operations along these lines in connection with irrigated farms in the West. It is not intended to finance from this appropriation other cooperative activities mentioned in the third paragraph above, which are undertaken for the benefit of specific projects and are paid for with reimbursable project funds.

BUREAU'S POWER OPERATIONS

Under its program of power operations, the Bureau of Reclamation will operate and maintain during fiscal year 1954, a total installed capacity of 4,731,650 kilowatts in 28 powerplants, an increase of 207,500 kilowatts over 1953; approximately 9,500 miles of high-voltage transmission lines, an increase of 2,000 miles; and 251 substations and switchyards, an increase of 20 substations and switchyards. In fiscal year 1952, total power revenues from all projects amounted to $41,768,774. The estimated revenues for fiscal year 1953 and fiscal year 1954 are $46,792,000 and $50,710,000, respectively.

During fiscal year 1954, an allotment of $16,402,403 will be required for operation and maintenance, minor replacements, operating equipment for power facilities, and for payment of wheeling charges. This amount represents an increase of $3,147,710 over the total amount of $13,256,693 appropriated for the individual projects for fiscal year 1953. This increase is due primarily to the following causes:

(*a*) An increase in wheeling costs due to increased loads and additional contracts. This amounts to more than $500,000 on the Central Valley project and about $200,000 on the other projects.

(*b*) Initial full year's operation of powerplants only operated a portion of fiscal year 1953. (Flatiron Pole Hill.)

(*c*) The initial operation of Canyon Ferry powerplant and additional units being placed in operation at Hungry Horse.

(*d*) Nonrecurring expense, such as rewinding generator at Shasta.

(*e*) The addition of 2,000 miles of transmission lines and 20 new substations and switchyards.

(*f*) Increase in purchase power requirements particularly on the integrated Missouri River Basin project due to the additional load requirements of the area.

The allotment of $16,402,403 requested for fiscal year 1954 for the operation and maintenance of all power projects operated by the Bureau of Reclamation represents a minimum budget that will permit adequate maintenance and at the same time assure full production of electric power on Bureau of Reclamation projects.

INDIVIDUAL PROJECT JUSTIFICATION

Statements on individual projects not covered in connection with construction activities are as follows:

OPERATION AND MAINTENANCE

IMPERIAL DAM, ARIZONA-CALIFORNIA

1954 allotment, $60,000

Imperial Dam is located approximately 19 miles upstream from Yuma, Ariz., on the Colorado River, and is the diversion point for the All-American Canal in California and the Gila gravity main canal in Arizona. Laguna Dam, an appurtenance of Imperial Dam, is 3 miles downstream from Imperial.

Under the terms of the March 1952 amendatory contract with the Imperial Irrigation District, operation and maintenance of the All-American Canal headworks and trashracks and the desilting basins at Imperial Dam, along with the remaining portion of the All-American Canal, was transferred to the district on

May 1, 1952. Reserved works that will continue to be operated by the Bureau of Reclamation include Laguna Dam and the Gila diversion work, the sluiceway gates, and the overflow section of the Imperial Dam.

The actual operation and maintenance of the reserved works will be financed with funds advanced by all of the water users who share in the water diverted at Imperial. In addition, however, the Bureau will be required, under the Mexican treaty and the All-American amendatory contract, to continue river investigations and analyses in the fields of hydrography and sedimentation, prepare master schedules for all of the operations at Imperial and Laguna, and supervise all phases of activity in connection with those operations. All appropriation of $60,000 will be required for these purposes, for fiscal year 1954, to be expended through the Office of River Control.

In approving a similar appropriation request last year, the House Appropriations Subcommittee included the following statement on page 12 of its report on the Interior Department Appropriation Bill, fiscal year 1953 (Rept. No. 1628, 82d Cong., 2d sess): "In view of the intense interest in the two States, California and Arizona, in this project the committee expects the Secretary of the Interior to report fully on the operations of the All-American Canal under the recently executed agreement." I am pleased to advise you that copies of such a report, entitled "Report of Flows and Diversions at Imperial Dam and All Actions Affectinging the Coordination Thereof for the Period May 1 to October 31, 1952," were forwarded on January 29, 1953, to the chairman of this committee and to the chairman of the Senate Appropriations Subcommittee for Interior.

YUMA PROJECT, ARIZONA-CALIFORNIA

1954 allotment, $176,000

The Yuma project is located in the southwestern part of Yuma County, Ariz., and the southeastern part of Imperial County, Calif. The city of Yuma, Ariz., lies in the heart of the 67,000-acre Yuma project, which supports a population of nearly 25,000 people.

The reservation division of the Yuma project and the Yuma auxiliary project are operated and maintained by the Bureau of Reclamation. Appropriated funds finance the operation of these features while repayment of construction and operation and maintenance costs are made under contracts with individual water users. Appropriated funds are also required for financing the Yuma auxiliary project and the reservation division shares of All-American Canal operation and maintenance expense incurred by the Imperial Irrigation District, since that district assumed the care and operation of the All-American Canal on May 1, 1952, under supplemental contract of March 4, 1952. The care and operation of the valley division of the Yuma project was taken over by the Yuma County Water Users' Association on July 1, 1951. Funds are advanced by the association to finance its share of operation and maintenance of the common feature facilities of the Yuma project. The association is under contractual arrangement for repayment of construction costs.

YUMA PROJECT, ARIZONA-CALIFORNIA (POWER FACILITIES)

1954 allotment, $25,000

This project is located in the southwestern part of Yuma County, Ariz., and the southeastern part of Imperial County, Calif.

An allotment of $25,000 is requested in fiscal year 1954 for normal operation of the 1,600-kilowatt siphon drop powerplant and associated electrical features.

This amount is $4,500 less than the previous year because of the completion of reconditioning work in previous years, not required in fiscal year 1954.

SAN LUIS VALLEY PROJECT, COLORADO

1954 allotment, $12,000

Platoro Dam and Reservoir are located on the Upper Conejos River in the south-central portion of Colorado. The dam was completed in December, 1951. It has a storage capacity of 60,000 acre-feet of which 6,000 acre-feet is tentatively allocated for flood control and 54,000 acre-feet for irrigation and flood control jointly. Supplemental irrigation water will be supplied to a gross area of 86,150 acres. Flood control will be provided primarily to all the lands of the Conejos River valley with secondary benefits along the Rio Grande valley in New Mexico

above Elephant Butte Reservoir. Provisions for repayment of irrigation's portion of the construction cost, 60 percent of the total project cost, is covered in a contract with the Conejos Water Conservancy District. The repayment contract is for a period of 40 years, preceded by a 5-year development period.

An allotment of $12,000 is requested to provide for the normal operation and maintenance of Platoro Dam and Reservoir during fiscal year 1954. Of this amount, $7,200 is allocated to irrigation and $4,800 to flood control.

BOISE PROJECT, IDAHO-OREGON

1954 allotment, $248,000

The Boise project is located principally in the Boise, Payette, and Snake River Valleys of southwestern Idaho, and includes approximately 224,000 acres of land in the project area. The water users operate and maintain the distribution works serving all of this acreage except for 51,760 acres comprising the Payette division. In addition, there are 132,200 acres furnished supplemental water. Water supply for the Payette division, adjacent to and north of Caldwell, Idaho, is obtained from storage in the 700,000 acre-foot Cascade Reservoir located some 80 miles to the north of the project area on the North Fork of the Payette River near Cascade, Idaho. Water released for irrigation is diverted at Black Canyon Dam, located some 7 miles above Emmett, Idaho, on the Payette River, through the Black Canyon Main Canal.

In addition to Cascade Dam and Reservoir, storage reservoirs for irrigation purposes include Arrowrock Dam and Reservoir on the Boise River and Anderson Ranch Dam and Reservoir on the South Fork of the Boise River.

Of the total amount required for operation and maintenance in fiscal years 1954, $262,700 will be required for the care and operation of irrigation facilities, a decrease of $9,350 from the current fiscal year, and $6,300 will be used for flood-control operations. Twenty-one thousand dollars of this total will be advanced by the water users.

BOISE PROJECT, IDAHO-OREGON (POWER FACILITIES)

1954 allotment, $310,260

The Boise project is located principally in the Boise, Payette, and Snake River Valleys of southwestern Idaho.

Of the total funds being requested in fiscal year 1954 for the Boise project, an allotment of $310,260 is requested for the normal operation and maintenance of the electrical features, together with that portion of the multipurpose facilities that are charged to power.

The power features consist of the Black Canyon, Boise River Diversion, and Anderson Dam powerplants and switchyards with a generating capacity of 8,000, 1,500, and 27,000 kilowatts, respectively, together with 54 miles of transmission lines and 17 substations.

The allotment requested for fiscal year 1954 is $540 less than that required in fiscal year 1953.

MILK RIVER PROJECT, MONTANA

1954 allotment, $1,000

The Milk River project consists of the Chinook, Malta, and Glasgow Divisions, and the Dodson pumping unit. Water for irrigation is obtained from the St. Mary and Milk Rivers, the St. Mary water being diverted to the Milk River watershed by the St. Mary Canal located a few miles east of Glacier National Park. Storage of St. Mary water is provided by Sherburne Lake Reservoir. Fresno Dam and Reservoir, located on Milk River about 15 miles west of Havre, provides for a regulation of the St. Mary water, as well as the storage of Milk River floodflow. Nelson Reservoir, an inland reservoir located some 18 miles north and east of Malta, provides a water supply for the lower portion of the Malta Division and the Glasgow Division. Irrigation of the lands is accomplished by diversions from Milk River at several points, as well as by pumping from the canal system and directly from the river. Water was first delivered for irrigation in 1911.

Repayment for construction works is provided for in contracts with the Malta, Glasgow, Zurich, Fort Belknap, Paradise Valley, Alfalfa Valley, Harlem, and Dodson Irrigation Districts and several municipalities, individuals, and industries. The storage works of the project, as well as the distribution systems of the Malta and Glasgow Divisions and the Dodson pumping unit, are operated and main-

tained by the Bureau of Reclamation with trust funds advanced by the water users, except for nonreimbursable flood-control expenditures beginning in fiscal year 1954. An appropriation of $1,000 is requested for the flood-control operations.

NORTH PLATTE PROJECT, NEBRASKA-WYOMING

1954 allotment, $1,000

The North Platte project is located along the North Platte River in western Nebraska and eastern Wyoming. The project's irrigation storage system is comprised of Pathfinder Reservoir, having a capacity of 1,016,000 acre-feet, and the Guernsey Reservoir, having a capacity of 49,150 acre-feet. The Whalen diversion dam near Whalen, Wyo., diverts water into the Interstate and Fort Laramie Canals. Four irrigation districts operate the distribution system within the project, consisting of 289 miles of main canal and 1,330 miles of laterals. The reserved works, consisting of Pathfinder and Guernsey Dams and Reservoir, Whalen diversion dam, and drainage works are operated and maintained by the Bureau of Reclamation with trust funds advanced by the water users, except for nonreimbursable flood-control expenditures beginning in fiscal year 1954. An appropriation of $1,000 is requested for the flood-control operations.

NORTH PLATTE PROJECT, NEBRASKA-WYOMING (POWER FACILITIES)

1954 allotment, $219,200

The North Platte project is located along the North Platte River in western Nebraska and eastern Wyoming.

Of the total amount requested for the operation and maintenance of this project in fiscal year 1954, an allotment of $219,200 is requested for the normal operation and maintenance of the power features and that portion of the multipurpose facilities charged to power.

The power features of the North Platte project consist of the Guernsey and Lingle powerplants and switchyards with an installed generating capacity of 4,800 and 1,400 kilowatts, respectively, 220 miles of transmission line and 6 substations.

There is a decrease in the allotment request for the operation and maintenance of the power features of this project for fiscal year 1954 in the amount of $2,200 compared with the fiscal year 1953 allotment.

CARLSBAD PROJECT, NEW MEXICO

1954 allotment, $3,000

Alamogordo Dam is on the Pecos River about 16 miles upstream from Fort Sumner, N. Mex., in DeBaca and Guadalupe Counties. The balance of the project is located in Eddy County in the Pecos River Valley in southeastern New Mexico. The project irrigation works consist of three reservoirs: Alamogordo, McMillan, and Avalon, and appurtenant distribution facilities. The project has 25,055 acres of water-right land of which about 24,000 acres are irrigated each year.

The original net construction cost of the project, $1,141,761, which includes Avalon and McMillan Dams and the distribution and drainage systems, was fully repaid in 1947. A supplemental contract dated January 16, 1936, and amended October 5, 1943, fixes the maximum obligation for Alamogordo Dam and project betterments at $2,600,000 to be paid in 40 equal annual installments. The district began payments on this contract in 1946 and in addition, advanced necessary funds for operation and maintenance of project works.

The Bureau of Reclamation operated the project from 1907 until October 1, 1949. On that date the care, operation, and maintenance of the project, Alamogordo Dam and Reservoir excepted, was transferred to Carlsbad Irrigation District. The Bureau will continue for an indefinite period to operate and maintain Alamogordo Dam and Reservoir with funds advanced by the district, except for the costs resulting from flood-control operations. An appropriation of $3,000 is requested for fiscal year 1954 to cover the flood-control allocations of the total operation and maintenance cost.

W. C. AUSTIN PROJECT, OKLAHOMA

1954 allotment, $2,060

The W. C. Austin project provides irrigation, flood control, municipal water supply, fish and wildlife conservation, and recreational benefits. The scheme of development includes a 148,600 acre-foot reservoir for irrigation storage and flood control and 270 miles of canals and laterals and 26 miles of drainage system to serve approximately 48,000 acres of irrigable land in the semiarid area within a 15-mile radius of Altus, Okla. A 3.2-mile pressure pipeline from the canal system furnishes a municipal water supply to the city of Altus.

Provisions for repayment of irrigation's portion of the construction cost representing approximately 26 percent of the total project cost, is covered by a contract with the Lugert-Altus Irrigation District. The remaining portion of the cost was financed by appropriations subsequently termed nonreimbursable by the Congress.

Operation and maintenance of all project facilities except Altus Dam was transferred to the water users on October 1, 1952. The Bureau of Reclamation will continue to operate and maintain Altus Dam and Reservoir with funds advanced by the district, except for the cost resulting from flood-control operations. An appropriation of $2,060 is requested for fiscal year 1954 to cover the flood-control allocation of the total operation and maintenance cost.

DESCHUTES PROJECT, OREGON, NORTH UNIT

1953 allotment, $201,500

The Deschutes project is located in central Oregon, east of the Cascade Mountains. Water supply for the 50,000-acre North unit of the project is stored in Wickiup Reservoir on the Deschutes River 65 miles south of the project lands. The project also furnishes supplemental water to 46,713 acres of private irrigation district lands from the Crane Prairie Reservoir, which was reconstructed by the Bureau in 1940, and 2,520 acres of the Lone Pine Irrigation District under the Warren Act or special contracts. The private irrigation districts operate and maintain Crane Prairie Reservoir.

Wickiup Dam and Reservoir and the North Unit main canal and distribution system are operated by the Bureau of Reclamation with appropriated funds, for which $201,500 is being requested for fiscal year 1954. Irrigation water is delivered on a rental basis. Provisions for repayment of construction costs are covered by contract between the United States and the North Unit Irrigation District. A contract with the Central Oregon Irrigation District provides for repayment of the costs of reconstructing Crane Prairie Reservoir.

SHOSHONE PROJECT, WYOMING-MONTANA—IRRIGATION

1954 allotment, $78,305

The Shoshone project, one of the oldest reclamation projects, is located in Park and Big Horn Counties in northwestern Wyoming and extends a short distance into Carbon County, Mont. It comprises 1 power division and 4 irrigation divisions, Garland, Frannie, Willwood, and Heart Mountain, with a total irrigable area of approximately 115,000 acres.

The Garland, Frannie, and Willwood divisions have been completed, construction repayments entered into, and the operation and maintenance of these divisions was transferred to the irrigation districts during 1927, 1930, and 1949, respectively. Only the Heart Mountain division is now operated by the Government. Steps are being taken to form an irrigation district as a preliminary to the execution of a repayment contract and the turning over to the water users the operation and maintenance of this division within the next 2 or 3 years.

Water supply is obtained from the Shoshone River and storage is provided by Buffalo Bill Reservoir, the capacity of which is 439,850 acre-feet. The reservoir is formed by Buffalo Bill Dam located in Shoshone Canyon about 7 miles west of Cody, Wyo. Power and irrigation jointly operate and maintain the Buffalo Bill Dam and Reservoir with associated water-release valves, the headworks for the Heart Mountain powerplant, and the Heart Mountain Canal siphon, but a portion of such operations are for the prevention of floods.

A total appropriation of $78,305 is requested for irrigation and flood-control operations during fiscal year 1954. Of this total, $72,040 is required for operation and maintenance of irrigation facilities. It will be supplemented by trust funds advanced by the water users in the amount of $3,000. In addition, a non-

reimbursable allotment of $6,265 is required to cover the portion of multipurpose costs of the project determined to be applicable to flood-control operations.

Shoshone project, Wyoming-Montana—Power, 1954 allotment, $104,895

The Shoshone project is located in Park and Big Horn Counties in northwestern Wyoming and extends a short distance into Carbon County, Mont.

Of the total funds being requested in fiscal year 1954 for the operation and maintenance of the Shoshone project, an allotment of $104,895 is required for the normal operation and maintenance of Shoshone and Heart Mountain powerplants and switchyards, with an installed generating capacity of 5,600 and 5,000 kilowatts, respectively, plus that portion of the multipurpose facilities that are charged to power.

There is a small increase in the allotment request for fiscal year 1954 of $3,535 over that of fiscal year 1953 due to higher cost of material and labor.

The expense of operation and maintenance of the transmision lines and substations is included with the allotment request of the Missouri River Basin project.

MISSOURI RIVER BASIN PROJECT

1954 allotment, $3,571,743

The developments of the Missouri River Basin project are located within the drainage basin of the Misouri River in the States of Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, and Kansas.

Of the total funds being requested in fiscal year 1954 for the operation and maintenance of the Missouri River Basin project, an allotment of $3,172,486 is required for the normal operation and maintenance of the power features of the project plus that portion of the multipurpose facilities which is charged to power. This allotment also includes the normal operation and maintenance of the transmission system facilities of the Colorado-Big Thompson, Kendrick, Riverton, and Shoshone projects.

The power features of the project consist of 4,400 miles of transmission lines, 125 substations, and the following powerplants and switchyards:

Powerplant:	*Installed generating capacity (kilowatts)*
Boysen (Wyoming)	15,000
Angostura (South Dakota)	1,200
Canyon Ferry (Montana)	50,000
Kortes (Wyoming)	36,000
Total	102,200

The allotment request for fiscal year 1954 represents an increase of $1,098,136 over that required for fiscal year 1953, due to the following principal reasons:

(1) An increase in the amount of purchase power requirements to meet additional loads, particularly in the Colorado-Wyoming area. This increase amounts to $376,050.

(2) The initial full-year operation of Canyon Ferry powerplant and the Boysen powerplants. These plants were operated only a portion of the fiscal year 1953.

(3) The addition in fiscal year 1954 of approximately 250 miles of transmission line and 19 new substations.

(4) An increase in the replacement and improvement items which are required for continuous and safe operation of the project.

INTEGRATION OF POWER FACILITIES OF THE RIVERTON, SHOSHONE, KENDRICK, COLORADO-BIG THOMPSON, AND MISSOURI RIVER BASIN PROJECTS

On July 1, 1952, the power systems of the Riverton, Shoshone, Kendrick, Colorado-Big Thompson, and that portion of the Missouri River Basin project in Colorado, Wyoming, and western Nebraska were considered as consolidated into one integrated system over which power and energy would flow without regard to project boundary lines. The Missouri River Basin project has been designated as the power operating and marketing agent for this integrated system. The power revenues are accounted for on a consolidated power system basis and the individual projects are credited for their share of the net revenues on the basis of operations as independent systems.

The results of this consolidation are that there is only one power operation and maintenance budget instead of the five power operation and maintenance budgets previously required. For accounting purposes there is now one large consolidated power system rather than the previous five artificially limited systems. Such simplification greatly improves efficiency, economy, and reliability of operations, marketing, budgeting, and cost and revenue accounting.

CHEYENNE DIVISION, ANGOSTURA UNIT, SOUTH DAKOTA

1953 allotment, $23,470

Angostura Dam is located on the Cheyenne River about 7 miles southeast of the city of Hot Springs, S. Dak.

This multipurpose project consists of a dam and reservoir, irrigation system, and hydroelectric power plant. The dam was completed in fiscal year 1950, with a total reservoir storage capacity of 160,000 acre-feet which includes 68,000 acre-feet of dead or silt storage, 92,000 acre-feet of active storage, but not including 60,000 acre-feet of superstorage. The irrigation system presently under construction will supply water to 12,154 acres of irrigable land.

A water-users contract was signed May 29, 1951, wherein the irrigation district agrees to repay the entire cost of the distribution works over a period of 40 years and to partially pay for the costs of the supply works during the same period.

A total appropriation of $23,470 is requested to provide for operation and maintenance of all multipurpose project features, except power, during fiscal year 1954. Of this total, $20,400 will be required for irrigation operations, while $2,250, $520, and $300 will be required for flood control, recreation, and fish and widlife, respectively. The last three items will be nonreimbursable. The $20,400 of reimbursable irrigation operation and maintenance funds will be supplemented by $5,000 of trust funds to be advanced by the water users.

ANGOSTURA UNIT (POWER FACILITIES)

1954 allotment, $7,030

The funds for the operation and maintenance of the power features of the Angostura unit are included in the amount being requested for the operation and maintenance of the Missouri River Basin project.

Of the total allotment request of $3,172,486 for the normal operation and maintenance of the power features of the Missouri River Basin project for fiscal year 1954, $7,030 is for the Angostura unit. This allotment is for the normal operation of the Angostura powerplant and represents a decrease of $20 under that required for fiscal year 1953.

MISSOURI RIVER BASIN PROJECT

BOYSEN UNIT

1954 allotment, $13,200

The Boysen dam and powerplant are located on the Wind River about 18 miles south of Thermopolis, Wyo.

In addition to its primary function, this multipurpose unit of the Missouri River Basin project provides flood control, fish and wildlife conservation, and recreational benefits. A nonreimbursable appropriation of $13,200 is requested to provide for the operation and maintenance of these project features during fiscal year 1954, apportioned as follows: Flood control, $7,100; fish and wildlife, $4,500; recreation, $1,600.

BOYSEN UNIT (POWER FACILITIES)

1954 allotment, $104,300

The funds for the operation and maintenance of the power features of the Boysen unit are included in the amount being requested for the operation and maintenance of the Missouri River Basin projects.

Of the total allotment request of $3,172,486 for the normal operation and maintenance of the power features of the Missouri River Basin project for fiscal year 1954, $104,300 is for the Boysen unit. This allotment is for the normal operation of the Boysen powerplant and represents an increase of $30,100 over that required for fiscal year 1953. This increase is due primarily to the fact that the Boysen powerplant was only operated for a portion of fiscal year 1953 and the funds being requested for fiscal year 1954 will provide for a full year's operation.

HEART DIVISION-DICKINSON UNIT, NORTH DAKOTA

1954 allotment, $4,000

The Dickinson unit is located in west-central North Dakota, 2 miles west of the city of Dickinson. Dickinson Dam, completed in 1950, provides for irrigation of 915 acres of land, flood control, municipal water for the city of Dickinson, and release of water for pollution abatement downstream from the dam. Additional benefits result from fish and wildlife conservation and recreational use of the reservoir which has a storage capacity of 25,700 acre-feet, including 9,200 acre-feet of superstorage. Normal conservation storage is 4,000 acre-feet, of which 1,100 acre-feet are for municipal water supply for the city of Dickinson.

A contract has been completed with the city of Dickinson for a 40-year period to pay a total of $950,000 or 60 percent of the total cost of the project. The 915 acres of irrigable land in the unit are being developed by private interests, with water furnished on rental agreements at $1.50 per acre irrigated. The remaining portion of the unit cost will be paid from Missouri River Basin project power revenues.

A total appropriation of $4,000 is requested for operation and maintenance of the Dickinson unit during fiscal year 1954, apportioned as follows: irrigation and municipal water $1,700; flood control $1,200; recreation $500; fish and wildlife $600.

NORTH DAKOTA PUMPING DIVISION—FORT CLARK UNIT, NORTH DAKOTA

1954 allotment, $5,212

The Fort Clark unit is located in central North Dakota on the west bank of the Missouri River near the town of Fort Clark. It is a single-purpose irrigation project. The irrigable land totaling 2,100 acres of river bottom land and first-bench land is fertile, and under irrigation will assist in stabilizing the agriculture of the area where recurring droughts have seriously retarded development. Water is lifted from the Missouri River by means of pumps. Two relift pumping plants deliver water to higher portions of the project area.

Provision for repayment of the irrigation portion of the construction cost is covered by a contract with the Fort Clark Irrigation District. The remaining portion of the unit cost will be paid from Missouri River Basin project power revenues.

An appropriation of $5,212 is requested for operation and maintenance of the Fort Clark unit during fiscal year 1954.

HEART DIVISION—HEART BUTTE UNIT, NORTH DAKOTA

1954 allotment, $10,500

Heart Butte Dam is located on the Heart River 15 miles south of Glen Ullin, N. Dak. Completed in 1949, it was built to provide for the control of floods and to store water for the irrigation of 13,100 acres of land lying downstream in the Heart River Valley. The reservoir has a capacity of 426,000 acre-feet, of which 350,000 acre-feet are reserved for flood control, while the remainder is available for irrigation of project lands. Water will be lifted from the river to the irrigable tracts by means of a series of pumping plants.

An appropriation of $10,500 is requested for operation and maintenance of the Heart Butte Dam and Reservoir during fiscal year 1954, apportioned as follows: irrigation, $2,500; flood control, $6,700; recreation, $100; fish and wildlife, $1,200.

KEYHOLE UNIT, CHEYENNE DIVISION, WYOMING

1954 allotment, $6,000

Keyhole Dam is being constructed on the upper reaches of the Belle Fourche River, 17 miles from the town of Moorcroft, Wyo.

The Keyhole unit will be a multiple-purpose development providing flood protection and pollution abatement along the Belle Fourche River in Wyoming and South Dakota, a supplemental water supply to stabilize diversions to the existing Belle Fourche project in South Dakota, and a source of municipal water for the city of Belle Fourche. The principal feature of the unit is the dam and reservoir with a total storage capacity (exclusive of 288,400 acre-feet of superstorage) of 340,000 acre-feet. This amount includes 70,000 acre-feet of silt storage, 130,000 acre-feet of irrigation storage, and 140,000 acre-feet of flood storage.

No irrigation distribution facilities will be constructed as a part of the Keyhole unit. Water will be held in the Keyhole Reservoir until the supply in the Belle Fourche Reservoir becomes low; then be released from Keyhole to replenish the supply in the Belle Fourche Reservoir and allow continued irrigation on the 55,708 acres of land of the Belle Fourche irrigation project. Negotiations for a repayment contract with the Belle Fourche irrigation district and the municipality of Belle Fourche are in progress.

An appropriation of $6,000 is requested for operation and maintenance of the Keyhole unit during fiscal year 1954, apportioned as follows: Irrigation $600; flood control $4,600; recreation $1,100; fish and wildlife $300.

KORTES UNIT (POWER FACILITIES)

1954 allotment, $147,000

The funds for the operation and maintenance of the power features of the Kortes unit are included in the amount being requested for the operation and maintenance of the Missouri River Basin project.

Of the total allotment request of $3,172,486 for the normal operation and maintenance of the power features of the Missouri River Basin project for the fiscal year 1954, $147,000 is for the Kortes unit. This allotment is for the normal operation of the Kortes unit and represents an increase of $14,000 over that for fiscal year 1953. This increase is due primarly to the wage board increases granted since the previous budget submittal.

SOIL AND MOISTURE CONSERVATION OPERATIONS

1954 allotment, $920,000

Soil and moisture conservation operations of the Bureau of Reclamation are particularly important in connection with the prevention of sedimentation of reservoirs and the protection of water distribution systems above reclamation projects, around which has been developed a major part of the agricultural economy of the Western States. The security of these projects and the economies developed through them will be endangered if we neglect to protect key structures, related facilities, and the reclaimed areas from preventable damage by erosion and sedimentation.

During the past several years, a more effective attack has been made on the soil and water loss problems that confront us, particularly through increased construction on the Five Mile and Muddy Creeks above Boysen Reservoir in Wyoming and on the Rio Grande project above El Paso, Tex. In connection with this program, every effort is being made to accomplish worthwhile benefits on the ground, while holding overhead and survey and investigations costs to a minimum.

Work in progress, mostly of a continuing nature, that we feel to be particularly noteworthy includes the program on sand dune stabilization on the Columbia Basin project; erosion control on the lands immediately tributary to Shasta and Keswick Reservoirs of the Central Valley project through the building of minor structures and revegetation; water conservation investigations throughout the Southwest, with emphasis on the eradication or control of salt cedars; operations for the control of erosion in the Book Cliffs area of Colorado; construction for the control of erosion in the Picacho Arroyo above the Rio Grande project; and continued construction and revegtation operations for the control of Five Mile and Muddy Creeks in Wyoming.

The soil and moisture conservation program of the Bureau continues to be accomplished both through its individual efforts and through effective cooperation with all other interested agencies in each of the areas concerned. The Bureau's field representatives work closely with the Bureau of Land Management, the Geological Survey, the Forest Service, and the Soil Conservation Service, as well as with soil conservation and irrigation districts and other water users' organizations. Cooperative argeements have been made with each of those agencies in one or more of our regions to insure that a definitely planned, concerted effort will be put forth in our attack on mutual problems.

Measures proposed for accomplishment during fiscal year 1954, in addition to continued surveys and investigations of problem areas, include revegetation of overgrazed or denuded lands; construction of retention dams; development of water-spreading structures; construction of check dams and water drops along with other gully control efforts; removal of salt cedar growths; and utilization of such other soil and moisture conservation practices as needed for specific conditions.

A special word might be said with reference to the accumulation of sediment in reservoirs, which has long been recognized as one of the principal problems involved in providing for regulation of rivers by storage in the western United States. This is particularly true, of course, in parts of the Southwest and in similar areas where watersheds are largely wastelands and erosion rates are particularly high.

There has been a tendency on the part of many people to "view with alarm" in connection with sedimentation of our western reservoirs. In a paper published in 1945, an eminent engineer from one of the Western States predicted that in the absence of works to withhold silt upstream from Lake Mead, the storage capacity of that greatest of all reservoirs will be filled entirely with silt by the year 2079, or within 144 years after storage was begun.

Surveys completed in 1949 show that a conservative estimate of the minimum total life of Lake Mead would be in the neighborhood of 330 years, even without any future construction upstream. The following table shows actual survey data on 6 reservoirs that have been surveyed within the past 5 or 6 years.

Reservoirs	Location	Date of first storage	Original total capacity (acre-feet)	Date most recent survey	Total capacity (acre-feet)	Total capacity loss in percent	Years in which loss occurred	Estimated total life in years
Altus	North Fork Red River, Okla.	1940	156,668	1948	148,640	5	8	160
Arrowrock	Boise River, Idaho.	1915	279,250	1947	271,550	2¾	32	1,200
Belle Fourche	Owl Creek, S. Dak.	1907	208,850	1949	191,970	8	42	500
Elephant Butte	Rio Grande, N. Mex.	1915	2,634,800	1947	2,197,600	16½	32	200
Guernsey	North Platte River, Wyo.	1927	73,810	1947	49,150	33—	20	60
Lake Mead	Colorado River, Ariz.-Nev.	1935	31,142,000	1949	29,827,000	4¼	14	330

In nearly all cases, present estimates indicate greater length of life of major western reservoirs than those made prior to 1945. Even the present estimates, however, are extremely conservative. In the United States, there is no experience to guide us in estimating how rapidly a large reservoir will fill in the last stages of its life. In the upper reaches of a reservoir, sediment exposed part of the time becomes more compact when it dries and, when constantly under water at lower elevations, is compacted by weight as the deposits grow deeper. The space occupied by a given weight of sediment, therefore, will vary with the type of reservoir operation and the age of the reservoir. This is one of the reasons why successive surveys of a reservoir tend to show decreasing rates of sediment accumulation.

Taking these factors into consideration, it is reasonable to expect the total life of Lake Mead to be 400 years or longer, without either additional upstream construction or installation of any watershed control works.

In view of the above facts, it is patently infeasible to attempt stabilization of all watershed lands, regardless of the cost. Much good can be accomplished in some areas and, within the limits of soil- and moisture-conservation funds available to the Bureau of Reclamation, works have been installed for stabilization of public land areas immediately tributary to our reservoirs, where clearly justified economically. The Bureau is also cooperating with other agencies of the Federal Government in investigations and planning for more extensive works on larger watershed areas, which might be undertaken when justifications are clearly established and funds made available therefor.

FUNDS TRANSFERRED TO OTHER AGENCIES

Mr. JENSEN. Also place in the record a statement concerning funds transferred to other agencies. List them on 1 page so that we will have them on 1 sheet and then note what the money is for in these other agencies. This will include all of the agencies.

(The material requested follows:)

Statement on estimated funds for transfer or reimbursements to other Federal agencies in fiscal year 1954

Activity and agency	Amount	Purpose of transfer or reimbursement
General investigations:		
Alaska Road Commission	$10,000	To construct access road required for the investigation of Devil Canyon project by Bureau of Reclamation.
Corps of Engineers	3,000	To make flood control studies for Bear River project, Idaho, Utah, under investigation by Bureau of Reclamation.
Fish and Wildlife Service	31,500	To make fish and wildlife conservation studies required in connection with planning for potential reclamation projects.
Geological survey	147,565	For stream gaging and groundwater studies required to obtain basic data for water supply studies required in planning of potential reclamation projects; and for evapo-transpiration studies needed to develop methods and procedures for estimating consumptive use of water.
National Park Service	12,500	For studies of potential recreational developments in connection with potential projects under investigation by the Bureau of Reclamation.
Soil Conservation Service	1,100	To make sedimentation studies required in connection with investigations of the potential Colorado River Storage project and Fryingpan-Arkansas project by the Bureau of Reclamation.
Weather Bureau	41,565	For hydrometeorological studies required to develop methods and procedures for estimating flood flows for use in designs of spillways for dams and other hydraulic structures.
Subtotal, general investigations	247,230	
Construction and rehabilitation:		
Bureau of Land Management	350,000	To continue land classification and cadastral surveys throughout the Missouri River Basin.
Bureau of Mines	150,000	To continue compilation and summarization of data on all known mineral resources in the Missouri River Basin and the development of mining, preparation, and utilization methods.
Fish and Wildlife Service	350,000	To continue making inventories of fish and wildlife resources and analysis of proposed multipurpose developments and their effect on fish and wildlife resources in the Missouri River Basin with the view of protecting or improving those resources.
Geological Survey	3,300,000	To continue work throughout the Missouri River Basin on topographic mapping and surveys, geological and mineral resource surveys and mapping, and water-resources investigations.
National Park Service	300,000	To continue surveys and investigations in connection with the planning of recreational facilities and the recovery and preservation of irreplaceable historical and archeological resources affected by water-resource development projects in the Missouri River Basin.
Bureau of Indian Affairs	300,000	To continue work on the determination of damages to Indians arising from the taking of land for reservoir rights-of-way, appraisal of benefits accruing to the Indians, effective and efficient use of all Indian resources, and rehabilitation of Indian families in connection with the Missouri River Basin project.
State colleges, experiment stations, and extension services.	[1] 327,100	For research on the economic, engineering and agricultural phases of irrigation development required in the planning, construction, and operation of reclamation projects ($19,500); transfers to State colleges to aid in employment of assistant county agents who give special assistance to settlers on reclamation projects on land clearing and leveling, layout and construction of farm distribution systems, irrigation and cultural practices ($175,800); and services rendered by State colleges primarily in soil testing and laboratory work required in connection with land classification ($21,800).
U. S. Department of Agriculture	[2] 77,500	For research such as weed control, lower cost canal lining and seepage losses by the Bureau of Plant Industry and Soil Conservation Service ($7,500); and snow surveys and water control and conservation plans by Soil Conservation Service and consultation and services with the salinity laboratory in connection with salinity and alkali problems ($70,000).

See footnotes at end of table.

Statement on estimated funds for transfer or reimbursements to other Federal agencies in fiscal year 1954—Continued

Activity and agency	Amount	Purpose of transfer or reimbursement
Subtotal, construction and rehabilitation	$5,154,600	
Operation and maintenance: U. S. Department of Agriculture	800,000	For economic analysis of agricultural problems; for soil management, irrigation, salinity, and weed control investigations in reclamation areas; for research and engineering investigations relating to irrigation and drainage; and for soil surveys, land capability studies, and technical assistance to farm irrigators.
Grand total	6,201,830	

[1] These amounts based on transfers made or to be made in fiscal year 1953. While the detailed program for cooperative work has not been formulated, it is anticipated the requirements for fiscal year 1954 will approximate those shown.

[2] In addition to the amounts shown for construction and rehabilitation, numerous relatively small amounts will be transferred as the need arises to other Federal agencies for assistance in specialized fields in which they are particularly qualified.

UNOBLIGATED BALANCE

Mr. JENSEN. What is the estimated unobligated balance as of June 30, 1953, in the entire program?

Mr. LINEWEAVER. It is now estimated at $19,251,609. That was the estimate as of February 28, 1953.

Mr. JENSEN. Would that figure be changed very materially at this time?

Mr. LINEWEAVER. It usually does go up, although we think that because of the progress in construction and a mild winter that the field is able to estimate the anticipated unexpended balance more accurately than has been the case in previous years.

I would point out that of that $19 million, as we stated yesterday, $11 million or so is included in the Central Valley estimated carryover which has been used to finance the proposed program for 1954 in the Central Valley. Really, there is a net estimated carryover of about $6 million. A total of $13 million of that $19 million has been programed for 1954, leaving a net estimate of about $6 million.

Mr. JENSEN. You will work with the executive secretary of the committee, Mr. Culp, in furnishing these figures and I want you to be as accurate as you can. Of course, they are bound to be estimates, but I remember last year during the hearings you estimated all unobligated balances as of July 1, last, would be in the neighborhood of $26 million, and I believe it was in the neighborhood of $50 million, actually, when July 1 arrived.

Mr. GOLZE. Yes, sir. It was a little over $49 million, which was the final figure. We have a statement on that, if we may put it in the record, Mr. Chairman.

Mr. JENSEN. Without objection, the statement will be inserted in the record at this point.

(The matter referred to is as follows:)

ESTIMATES OF UNOBLIGATED CONSTRUCTION AND REHABILITATION FUNDS, JUNE 30, 1953

The following tabulation lists by projects and Missouri Basin units the estimates of construction and rehabilitation funds that will be obligated on June 30, 1953. This estimate is first prepared in connection with the assembly of the

President's budget in December of each year. As of December 1952 it was the estimate of the Bureau that $11,361,025 would be unobligated on June 30, 1953, and this amount was reflected in the budget for fiscal year 1954.

The estimates were again reviewed at the time of preparation of the justifications in support of the fiscal year 1954 estimates before the House Appropriations Committee. This review, accomplished early in January, developed a new total of $13,167,892. Beginning at the close of January and at the close of each month thereafter revised estimates of the June 30 unobligated balance are prepared by the Bureau of Reclamation. As of January 31 this estimate totaled $16,679,990. As of February 28 the estimate was $19,251,609.

The unobligated balance on June 30 represents funds originally programed (with few exceptions) for obligation during the current year. Failure to obligate is due to events occurring during the year that could not be foreseen at the time the programs were approved early in the fiscal year. The principal occurrence leading to the increase in the unobligated balance is the delay in awarding major contracts for construction and equipment. Contract earnings constitute the bulk of the Bureau's obligations and expenditures.

Experience with these estimates of unobligated balances over a period of years shows that it is not feasible to develop an accurate forecast until the fiscal year is far enough along to gage with some accuracy the award of contracts to be made before June 30. It is ordinarily April before the estimates begin to be perfected so that it is at the close of April that the estimates of unobligated balance approach what will be finally realized. For example, in connection with the estimate for fiscal year 1953, considered by the Congress during the late winter and spring of calendar year 1953, the Bureau estimated on January 31 that the unobligated balance would be $22,502,086. This estimate did not change much through February and March, but as of April 30, 1952, the Bureau's estimate had risen to $44,562,161. The final figure, based on the Bureau's books of accounts on June 30, 1952, was $49,123,417.

Unobligated construction and rehabilitation funds at June 30, 1953, estimated through Feb. 28, 1953

Fiscal year 1954 appropriation status and project	Submitted to Congress		Field estimates, Feb. 28, 1953
	President's budget	Justifications for appropriations	
Funds requested:			
Boulder Canyon—Hoover Dam and powerplant			
Cachuma	$36,782	$36,782	$216,782
Central Valley	10,182,007	11,771,387	11,900,826
Kern River			10,000
Kings River	2,324	2,324	2,324
Colorado-Big Thompson			200,000
Colorado River front work and levee system			337,000
Columbia Basin			
Davis Dam			275,106
Eden			149,000
Eklutna			
Fort Peck			
Gila			245,616
Hungry Horse			450,000
Kendrick			100,000
Klamath			
Minidoka—north side pumping			
Missouri River Basin	100,000	195,000	2,127,076
Palisades			
Paonia	2,422	2,422	67,422
Provo River	24,749	24,749	350,000
Rio Grande—power	16,500	16,500	48,250
Riverton			50,000
Vermejo			5,000
Weber Basin			
Yakima:			
Kennewick			
Rosa	12,656	12,656	37,149
Drainage and minor completion	25,000	25,000	542,204
Rehabilitation and betterment	2,000	124,487	312,189
Unallotted reserve	161,581	161,581	161,581
Subtotal	10,566,021	12,372,888	17,587,525
Funds not requested:			
Boulder Canyon—All-American Canal system:			
Coachella division	402,177	402,177	1,018,000
Imperial division			37,315
Grants Pass—Savage Rapids Dam	61,938	61,938	71,470
Middle Rio Grande [1]	330,889	330,889	389,049
San Luis Valley [1]			119,000
Solano [2]			
Subtotal	795,004	795,004	1,634,834
Centralized project activities			20,000
Denver Office—design and specifications			
Total	11,361,025	13,167,892	19,242,359
Working funds—other agencies			9,250
Grand total	11,361,025	13,167,892	19,251,609

[1] General investigation funds requested for fiscal year 1954.
[2] Request for funds subject to approval of repayment contract.

NOTE.—Excludes funds for Milk River and Buford-Trenton flood damage repairs and for operation and maintenance of Missouri River Basin financed with construction funds.

See footnotes at end of table.

MISSOURI RIVER BASIN

Phase and unit	Submitted to Congress		Field estimates Feb. 28, 1953
	President's budget	Justifications for appropriations	
Phase A, units under construction:			
Bostwick division			$150,000
Canyon Ferry unit			200,000
Cedar Bluff unit			
Crow Creek pump unit			
Frenchman-Cambridge division			100,000
Heart Butte unit		$95,000	320,000
Jamestown unit			
Kirwin unit			
Lower Marias unit			
Missouri diversion unit			
Rapid Valley unit			
St. Francis unit			40,000
Shadehill unit			
Transmission division—region 6:			
Big Horn district			303,000
Missouri-Oahe district			5,000
Missouri-Souris district			
Upper Missouri district			
Yellowstone district			5,000
Transmission division—region 7:			
Lower Platte River area			
North Platte River area			419,000
Webster unit			
Drainage and minor completion			76,000
Phase B:			
Units ready for construction:			
Bluff unit			
Charley Creek unit			3,000
Glendo unit	$100,000	100,000	150,000
Glen Elder unit			
Hanover unit			
Helena Valley unit			
Nickwall unit			10,000
Owl Creek unit			10,000
Sargent unit			
Wilson unit			
Yellowtail unit			5,009
Units being prepared for construction:			
Region 6			76,968
Region 7			201,000
Phases C and D, general plan of development:			
Region 6			3,000
Region 7			50,108
Total	100,000	195,000	2,127,076

EFFECT OF RENEGOTIATION REGULATIONS

Mr. MARKWELL. There are three statements which I would like to put in the record that deal with the regulations of the Wage Renegotiation Board as it affects the Bureau and the limitation on the amount allotted for consultant and force accounting.

Mr. JENSEN. How voluminous are those statements?

Mr. MARKWELL. They are of 2 or 3 pages each.

Mr. JENSEN. Without objection, those statements will be inserted into the record at this point.

(The statements follow:)

RENEGOTIATION OF CONTRACTS

The Renegotiation Act of 1951, which provides a means whereby the Government can recover any excessive profit which might be made by contractors in the course of the national defense program, originally was not applicable to contracts of the Bureau of Reclamation. On June 30, 1952, the President issued Executive Order 10369 designating the Bureau of Reclamation, pursuant to section 103 (a) of the act, as an agency of the Government included within the definition of the term "Department" for the purposes of title I of the act. This had the effect of making the Renegotiation Act applicable to all contracts with

the Bureau of Reclamation and related subcontracts to the extent of the amounts received or accrued on or after the 1st day of July 1952, whether such contracts were made on, before, or after that date.

Subsequently the Renegotiation Board issued regulations providing in essence that contracts related to the Bureau of Reclamation's power program are subject to renegotiation, whereas contracts in connection with irrigation purposes are not.

In accordance with the Renegotiation Act, the Bureau now incorporates a renegotiation clause in all contracts which are subject to the act. The contractors make all required reports direct to the Renegotiation Board, not through the Bureau of Reclamation. The Board determines whether there is an indication of excessive profits warranting initiation of renegotiation proceedings and conducts such proceedings, if any. Because of the short time that Reclamation contracts have been subject to the Renegotiation Act, none of our contracts have come up for renegotiation, so we are unable to predict what if any effect renegotiation will have on Bureau contractors.

CONSTRUCTION AND REHABILITATION—FORCE ACCOUNT CONSTRUCTION

The Bureau of Reclamation is now operating under a limitation in the Appropriation Act of 1953 which limits the amount of work that may be done by force account to 12 percent of the allotment on any project or Missouri River Basin unit, except that not to exceed $225,000 on any one project may be expended for force account when the work is unsuitable for contract or when excessive bids are received or in cases of local emergencies, so declared by the Commissioner.

It is the policy of the Bureau to have its work performed by contract regardless of any limitations on appropriations. The amount of force-account work on a bureauwide basis over a period of nearly 25 years has averaged less than 10 percent of the construction program. Even though the overall record is low, considerable difficulty is experienced in holding the force-account costs within the limitations on projects having small construction programs. Generally, the work on these projects is unsuitable and uneconomical to contract and can be done more satisfactorily by Bureau forces. A language change is being requested to make any force-account limitations applicable on a bureauwide basis rather than on a project basis.

A summary report for fiscal year 1952 follows:

DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington 25, D. C., February 11, 1953.

To: Chief Engineer, Denver, Colo., regional director, regions 1, 2, 3, 4, 5, 6, 7. District manager, Juneau, Alaska.
From: Assistant Commissioner.
Subject: Sumary of force-account construction, fiscal year 1953.

Enclosed is a summary of force-account construction compiled from reports sent in response to our speed letter of October 2, 1952. The Interior Department Appropriation Act, 1952, contains the following restriction on force account which is very similar to that of previous years.

"Not to exceed 12 percent of the construction allotment made by the Bureau of Reclamation for any project from the appropriation 'Construction and rehabilitation' contained in this act shall be available for construction work by force account or on a hired-labor basis; except that not to exceed $225,000 may on approval of the Commisioner be expended for construction work by force account on any one project or Missouri River unit when the work is unsuitable for contract or when excessive bids are received; and except in cases of emergencies local in character, so declared by the Commissioner."

The total force-account cost for the fiscal year was $3,566,418. The total fiscal year 1952 construction allotment for construction and rehabilitation was in round figures $196,076,000. On the basis of these figures, force-account construction in fiscal year 1952 amounted to 1.8 percent of the total allotment. We are pleased to note that this is the smallest amount and lowest percentage reported for any year since force-account limitations were imposed on Bureau appropriations.

It has consistently been the Bureau's policy to construct its works by contract whenever possible and feasible. Force-account construction is used only in those rare occasions where emergencies exist, no bids or excessive bids have been received, and the nature or location of the work is such that it is impracticable or impossible of performance by contract. The regional directors should review any proposed program of force account and make certain that it is the only feasible way of getting the work performed. ——— ———.

Construction by force account fiscal year 1952

Project	Fiscal year 1952 allotment	Fiscal year 1952 force-account costs	Percentage by force account
Region 1:			
Boise-Anderson Ranch	[1] $301,452	$250	0.1
Boise-Payette Division	154,200	34,441	[2]
Columbia Basin	27,000,000	1,534,065	5.7
Deschutes, north unit	300,000	21,488	7.2
Hungry Horse	22,000,000	21,402	.1
Lewiston Orchards	[1] 33,408	285	.9
Palisades	2,000,000	8,700	.4
Okanogan, rehabilitation	123,000		
Yakima-Roza Division	48,600	10,154	2.1
Yakima, rehabilitation	223,431		
Subtotal, region 1		1,630,785	
Region 2:			
Central Valley	33,570,000	356,046	1.1
Klamath	400,000	3,701	.9
Cachuma	10,000,000		
Orland rehabilitation	[1] 17,610	4,670	[2]
Kings River	12,000		
Kern River	75,000		
Subtotal, region 2		364,417	
Region 3:			
Boulder Canyon	2,900,000	222,244	7.6
Davis Dam	6,572,000	276,070	4.1
Colorado River front work and levee system	1,400,000		
Gila	6,870,000	60,657	.9
All-American Canal	3,154,000	14,276	1.1
Subtotal, region 3		573,247	
Region 4:			
Eden	1,900,000	27,316	1.4
Grand Valley rehabilitation	81,274		
Mancos	[3] 16,042	7,767	[2]
Paonia	186,000	3,204	8.4
Provo River	2,748,000	61,524	2.2
Subtotal, region 4		99,811	
Region 5:			
W. C. Austin	135,000	3,043	1.3
Fort Sumner	64,000	5,331	8.3
Middle Rio Grande	1,463,000		
Rio Grande	1,288,000	38,209	3.0
San Luis Valley	600,000		
Tucumcari	200,000	1,133	0.6
Vermejo	285,000		
Subtotal, region 5		47,716	
Region 6:			
Missouri River Basin (Reg. 6 and 7)	40,970,189	178,583	0.1
Riverton	1,534,000	112,915	7.4
Shoshone	350,730	57,972	[2]
Buffalo Rapids	277,600	1,836	2.4
Fort Peck	1,500,000	31,714	1.9
Milk River Rehabilitation	125,000	3,148	[2]
Sun River	40,400	3,530	8.6
Subtotal, region 6		389,698	
Region 7:			
Colorado-Big Thompson	19,000,000	375,544	2.0
Kendrick	2,250,000	85,200	2.6
Subtotal, region 7		460,744	
Eklutna	5,761,400		
Other R and B projects	1,515,005		
Total force-account construction, all regions		3,566,418	
Total fiscal year 1952 construction and rehabilitation allotment		196,076,000	
Bureauwide percentage of construction by force account			1.8

[1] No fiscal year 1952 funds allotted. Funds were carried over from prior years.
[2] Under $225,000 and unsuitable for contract.
[3] Minor force account work performed with prior years' unobligated WCU funds, not subject to force account limitation.

CONSULTANTS

The Bureau of Reclamation engages consultants under 2 separate authorities—the act of February 28, 1929, and section 15 of the act of August 2, 1946. The limitation under consideration applies to services authorized by the act of August 2, 1946. The first regular Interior Department Appropriation Act enacted after August 2, 1946, was the 1948 act, which made funds available for the services referred to with no limitation. The 1949, 1950, and 1951 Appropriation Acts each included a limitation of $100,000 on the availability of funds for procuring these services. The 1952 act reduced the limitation to $50,000.

Data tabulated below shows the expenditures for consulting services under both the authorities cited above for each year since funds have been available for services authorized by sec. 15 of the act of Aug. 2, 1946

	Fiscal years					
	1948	1949	1950	1951	1952	1953 through Dec. 31, 1952
Act of Feb. 28, 1929	$29,396	$28,510	$23,028	$22,630	$17,786	$5,640
Act of Aug. 2, 1946:						
Limitation in effect	(1)	100,000	100,000	100,000	50,000	50,000
Individuals	8,997	29,946	41,448	24,461	37,255	13,898
Contracts with consulting firms	0	0	36,000	37,500	10,000	0
Subtotal, act of August 2, 1946	8,997	29,946	77,448	61,961	47,255	13,898
Total	38,393	58,456	100,476	84,591	65,041	19,538

[1] No limitation.

Breakdown of the amounts paid for consulting services in fiscal year 1952 and the first 6 months of fiscal year 1953

	Fiscal year 1952			Fiscal year 1953 through Dec. 31, 1952		
	Number of consultants	Days worked	Total compensation	Number of consultants	Days worked	Total compensation
Act of Feb. 28, 1929: At rates of $35 to $50 per day	17	448	$17,786	7	143	$5,640
Act of Aug. 2, 1946: Individuals—						
At rates of $25 to $50 per day	5	204	7,551	1	11	333
At rate of $75 per day	0	0	0	2	76	5,700
At rate of $100 per day (listed below):	10			5		
F. A. Banks		139	10,979		38	2,886
H. W. Bashore		27	2,178		23	1,915
J. M. Clark		30	3,000			
E. L. Grant		28	2,850			
M. M. Kelso		30	3,012			
R. J. Newell		37	3,089		27	2,247
J. L. Savage		10	771		3	243
H. E. Selby		26	2,638			
Ole Singstad		5	531			
W. R. Young		8	656		7	574
Subtotal, individuals	15	544	37,255	8	185	13,898
Contracts with consulting firms: Ionics, Inc			10,000	0	0	0
Subtotal, Contracts			10,000	0	0	0
Subtotal, Act of Aug. 2, 1946			47,255	8	185	13,898
Total			65,041			19,538

Personnel Turnover

Mr. Lineweaver. Mr. Chairman, we have a statement for insertion in the record on Bureau of Reclamation personnel turnover, and we have a few other statements that we usually like to put in.

One is on the laboratory investigations in Denver; one is on the determination of nonreimbursable operation and maintenance costs, following the Senate amendment last year; one on the transfer of property to water users for operation and maintenance; the usual crop-production figures; the Federal tax revenues and reclamation that have developed since 1916 from reclamation arrangements; trade and reclamation arrangements; lower-cost canal-lining program; the settlement program; the development of farming operations and retail sales and reclamation.

Mr. Jensen. Without objection, those statements will be included in the record.

(The matter referred to is as follows:)

Bureau of Reclamation Personnel Turnover

Bureau of Reclamation personnel turnover for fiscal years 1950 through 1954, with the March through June period of 1951 and all of 1954 estimated, is shown in the accompanying summary tabulation on an annual basis, in total and for classified and wage-board employment, for each appropriation title, i. e., "General investigations," "Construction and rehabilitation," "Operation and maintenance," and "General administrative expenses."

For explanation of the term "personnel turnover" as applied in this presentation and for limitation in its use as a yardstick for administrative purposes, see attached excerpt of Explanatory Supplement to Federal Employment Statistics Bulletin issued by the United States Civil Service Commission, Washington, D. C.

The "Bureau total" personnel turnover data presented show that—

(1) Rate of accessions dropped from 60 percent in 1950 to 35 percent in 1953 and 1954 (estimated) and was accompanied by a sharp increase in rate of separations from 38 percent in 1950 to 54 and 53 percent in 1951 and 1952, respectively, followed by a drop to 37 percent and 34 percent estimated for 1953 and 1954, respectively. Both indices reflect, among other items, the expansion and subsequent contraction in the Bureau's annual programs and the resultant trend in its total average employment that has decreased from about 17,000 in 1950–51 to 14,000 in 1952 and 13,400 estimated for 1953–54.

(2) For 1953 and 1954, the rate of accessions of 35 percent approximates the rate of separations, indicating a stabilized turnover rate commensurate with annual programs of similar magnitudes.

The general pattern of Bureau total personnel turnover is applicable to each appropriation title including "Operation and maintenance," which, running counter to the Bureau's downward trend in total employment, shows an increase each year from its total employment of 2,572 in 1950 to 3,951 estimated for 1954.

By appropriation titles, the lowest rate of total accessions and lowest rate of total separations occur in "General administrative expense,' the former decreasing from 28 percent in 1950 to 8 percent in 1953 and 1954 and the latter ranging from a high of 26 percent in 1951 to a low of 9 percent estimated for 1954. The highest rate of total accessions occurs in "General investigations" amounting to 74 percent in 1950 and dropping to 33 percent in 1954. The highest rate of total separations occurs in "Construction and rehabilitation" amounting to 57 percent in 1951 then dropping to the 37–38-percent level in 1953 and 1954.

The turnover rates for wage-board employees, consistently higher than classified employees throughout the Federal Government and industry, show a range of 96 to 64 percent for accessions and 102 to 59 percent for separations for 1950 through 1954 for the Bureau total average employment. For classified employees the range of rate of accessions runs from 49 to 25 percent and that for separations from 41 to 26 percent over the same period.

Supporting details show wide variations among regions and offices in rates of accessions and separations due to geographical location, seasonal work, size of program, total employment, economic conditions, and other indeterminate causes.

UNITED STATES CIVIL SERVICE COMMISSION

WASHINGTON, D. C.

FEDERAL EMPLOYMENT STATISTICS BULLETIN—EXPLANATORY SUPPLEMENT

[Excerpt]

TURNOVER

Personnel turnover information is reported only for full-time employees in continental United States. Accessions and separations are not restricted to persons entering or leaving Government service; they include transfers between agencies and gains and losses to the active work force because of extended leave without pay and return to duty.

Methods of computation

Accession and separation rates are computed by dividing the total numbers of accessions or of separations, respectively, by the average number of employees and multiplying the result by 100. For example, if 40,000 separations were reported for the month, there were 1,750,000 employees at the beginning of the month and 1,700,000 employees at the end of the month, the separation rate is:

$$\frac{40{,}000 \text{ separations}}{\left(\frac{1{,}750{,}000+1{,}700{,}000}{2}\right)} \times 100 = 2.3$$

With reference to tables 6 and 7, agencies are ranked on the basis of accession or separation rates; the ranking is from the lowest rate to the highest.

Cautions

It must be borne in mind that turnover as used in the bulletin is not inherently "good" or "bad." When a change occurs in the functions of an agency or in the size of its appropriation or personnel ceiling, it becomes necessary to hire people or to lay them off. These accessions and separations are included in the totals as well as those which occur because of the worker's dissatisfaction with his job or management's dissatisfaction with the worker.

The extent of turnover varies between different groups, e. g,, regular and temporary employment, white-collar and blue-collar workers, men and women. Thus the differences among the agencies in the relative proportions of these groups in its organizational components, as well as such factors as reductions in force and other programs which cause changes in strength, should be taken into account in any appraisal and control of current conditions. A comparatively high quit rate does not necessarily indicate poor or inadequate personnel management; conversely, a low rate does not necessarily indicate a good personnel situation at any given time, because there are many factors bearing upon current conditions which should always be considered. When making any direct comparisons with data for other governmental agencies, for the Federal service as a whole, or for private industry, the personnel administrator must evaluate all these factors in his own organization and bear in mind the differences existing in other organizations.

Turnover rates for manufacturing industries reprinted in table 3 from publications of the Bureau of Labor Statistics are not directly comparable with those for the Federal Government because of the differences in composition of the two groups. Blue-collar workers are predominant in the manufacturing industries while in the Federal Government only 26 percent are wage-board employees, the group most nearly comparable to the blue-collar workers in private industry. Turnover rates for wage-board employees in the Federal Government are consistently higher than for the service as a whole. (See Table 8.)

Transfers between areas, changes between part-time and full-time groups, or conversions from temporary to regular appointments during continuous employment in the same agency are not considered turnover. Therefore, full-time employment totals in any particular group or area at the end of the previous month plus accessions and minus separations during the current month do not always equal total full-time employment for that group or area at the end of the current month.

DEFINITIONS OF TERMS

* * * * * * *

Turnover is used in the bulletin as a general term which refers to both accessions and separations.

* * * * * * *

Full-time employment turnover, by activity, fiscal years 1950–54

Type of employment and year	Total					General investigations					Construction and rehabilitation				
	Average employment	Accessions	Separations	Turnover		Average employment	Accessions	Separations	Turnover		Average employment	Accessions	Separations	Turnover	
				Accessions	Separations				Accessions	Separations				Accessions	Separations
Fiscal year 1950:															
Total	16,682	9,930	6,394	60	38	934	691	416	74	45	12,388	7,679	4,818	62	39
Classified	13,016	6,400	3,433	49	26	807	383	182	47	23	10,245	5,279	2,812	52	27
Wage board	3,666	3,530	2,961	96	81	127	308	234	243	184	2,143	2,400	2,006	112	94
Fiscal year 1951:															
Total	17,194	7,098	9,319	41	54	1,060	559	578	53	55	12,250	5,064	7,034	41	57
Classified	13,434	4,219	6,051	31	45	939	346	412	37	44	10,160	3,159	4,757	31	47
Wage board	3,760	2,888	3,268	77	87	121	213	166	176	137	2,090	1,905	2,277	91	109
Fiscal year 1952:															
Total	14,226	4,692	7,474	33	53	832	325	468	39	56	9,660	3,135	5,443	32	56
Classified	11,475	2,918	4,656	25	41	772	235	338	30	44	8,525	2,235	3,675	26	43
Wage board	2,751	1,774	2,818	64	102	60	90	130	150	217	1,135	900	1,768	79	156
Fiscal year 1953: [1]															
Total	13,392	4,636	4,998	35	37	704	262	276	37	39	8,913	2,742	3,338	31	37
Classified	10,767	2,830	3,196	26	30	671	195	195	29	29	8,023	2,049	2,487	26	31
Wage board	2,625	1,806	1,802	69	69	33	67	81	203	245	890	693	851	78	96
Fiscal year 1954: [1]															
Total	13,777	4,791	4,714	35	34	857	283	189	33	22	8,266	2,565	3,157	31	38
Classified	10,948	2,941	3,038	27	28	804	216	148	27	18	7,538	1,977	2,405	26	32
Wage board	2,829	1,850	1,676	65	59	53	67	41	126	77	728	588	752	81	103

Full-time employment turnover, by activity, fiscal years 1950–54—Continued

Type of employment and year	Operation and maintenance					General administrative expenses				
	Average employment	Accessions	Separations	Turnover		Average employment	Accessions	Separations	Turnover	
				Accessions	Separations				Accessions	Separations
Fiscal year 1950:										
Total	2,572	1,364	1,051	53	41	709	196	109	28	15
Classified	1,180	545	333	46	28	708	193	106	27	15
Wage board	1,392	819	718	59	52	1	3	3	300	300
Fiscal year 1951:										
Total	2,771	1,244	1,451	45	52	1,002	231	256	23	26
Classified	1,243	478	629	38	51	1,001	227	253	23	25
Wage board	1,528	766	822	50	54	1	4	3	400	300
Fiscal year 1952:										
Total	2,951	1,141	1,388	39	47	773	91	175	12	23
Classified	1,388	357	468	26	34	772	91	175	12	23
Wage board	1,563	784	920	50	59	1				
Fiscal year 1953: [1]										
Total	3,366	1,577	1,305	47	39	700	55	79	8	11
Classified	1,673	531	435	32	26	699	55	79	8	11
Wage board	1,693	1,046	870	62	51	1				
Fiscal year 1954: [1]										
Total	3,951	1,886	1,304	48	33	703	57	64	8	9
Classified	1,904	691	421	36	22	702	57	64	8	9
Wage board	2,047	1,195	883	58	43	1				

[1] 1953 based on 8 months' employment. Total of 1954 budget estimates: 1953, 14,251; and 1954, 14,220

ALLOCATION OF A PERCENTAGE OF ANNUAL APPROPRIATIONS TO LABORATORY INVESTIGATIONS IN DENVER

Mr. LINEWEAVER. Our statement on a proposal to allocate a percentage of appropriated funds to the Denver Laboratory of the Bureau is as follows:

The Bureau's engineering laboratories were born of necessity in 1930 because the answers to the many unusual problems imposed by the construction of Hoover Dam could not be found within engineering experience. Even more unusual ones followed at Grand Coulee, Friant, Hungry Horse, Shasta, and Anderson Ranch Dams; the All-American and Delta-Mendota Canals, and other projects. Our engineers now employ the tools of physics, chemistry, mechanics, petrography, and microscopy in finding the right answers to their problems, and the laboratories have become an essential part of the Bureau organization.

The records show that the cost of the installation, staffing, and operation of the Bureau's laboratories are more than repaid. Table I illustrates how more than $18,000,000 was saved during the first 16 years of operation through some of the improvements developed by the laboratories. A complete tabulation would total more than $20,000,000 during this 16-year period. Along with this economic gain must be reckoned the achievement of more efficient, more durable, and safer structures; the contributions to engineering knowledge for the benefit of all builders of engineering works; and most important of all, the more effective utilization and preservation of land and water which are vital to our national wealth and the foundation of our western economy.

During the period of initial growth of the laboratories, the work was financed by assessing the cost of each investigation to the particular project or projects to be immediately benefited. However, since the results achieved have proved to be of benefit to all projects generally, it has become apparent that it would be more logical to spread the cost of the laboratory program over the total appropriation. Table II shows how one-fourth of 1 percent of a typical annual appropriation is capable of financing a modest annual program of laboratory investigations comparable to current and recent years' programs. By comparison, currently available figures indicate that amounts spent by industrial firms, the majority of which maintain their own laboratories, average from 1.33 to 1.87 percent of total gross sales. This method of financing is conductive of better planning, and permits more fundamental studies of broader application to be fitted in along with those necessary for the solution of immediate problems in connection with the current construction program. These fundamental studies, the need for which has arisen in solving problems connected with specific projects, are directed toward conservation of materials and more economical design in keeping with recommendations of the President's Materials Policy Commission. It is contemplated that subjects of investigation which are basic in nature will be undertaken in cooperation with qualified colleges and universities wherever possible. Correlative information from trade associations, technical societies, and other Government agencies is utilized, and full advantage is taken of assistance from industry in furnishing materials and technical data. Results are disseminated to other interested Government agencies and to the public through reports and technical journals.

New problems are constantly arising because of the necessity of constructing on increasingly difficult sites, and construction costs are continually climbing. These conditions can only be met by better uses of materials and improved techniques, stimulated by a balanced program of laboratory investigations. In recognition of this, we are establishing a firm financial footing for the laboratories by assigning to them a conservative percentage of Reclamation's annual appropriation.

TABLE I.—*Some examples of laboratory accomplishments*

Project and problem	Solution	Estimated savings	Remarks
Hoover Dam:			
(1) Is practice of using richer concrete on upstream faces of dams necessary or justifiable?	(1) Unnecessary and unjustified.	$400,000	Estimated only for Hoover but applicable to all subsequent dams.
(2) Will an additional layer of Gunite be required?	(2) Not required	47,000	
Friant Dam:			
Can quantity of cement be reduced?	Local pumicite found suitable as pozzolanic admixture.	310,000	Applicable to many future projects.
Can longitudinal joints be eliminated and amount of concrete be reduced?	Measures to control temperature eliminated need for the joints and reduced thickness of concrete section.	300,000	Do.
Friant Reservoir: Pumicite deposit to be inundated by reservoir, so was stockpiled above high water. Owner said pumicite was impaired and worthless; claimed $500,000.	Laboratory studies proved pumicite was unimpaired, claim disallowed.	500,000	Representative of many similar problems of mineral appraisal.
Friant-Kern Canal: Must the entire canal be lined?	Field tests indicated that one 19-mile stretch need not be lined.	2,000,000	One example of fitting design to natural site condition.
Shasta Dam: Can concrete aggregate from nearest and cheapest source, although of inferior quality, be made suitable by processing?	(1) Can be made suitable by proper treatment.	1,285,000	
	(2) Can be transported to job by conveyor belt instead of by rail.	100,000	
Grand Coulee Dam: To improve knowledge and specification of cement.	Laboratory research and improved specifications reduced cost of cement; 11,000,000 barrels of cement for Grand Coulee, at 8 cents per barrel less than for Boulder Dam.	900,000	Estimated only for Grand Coulee, but applicable to all new projects and future construction.
Grand Coulee Dam: Is the spillway design the most effective and economical?	No. Hydraulic model tests permitted redesign using less concrete, 1 less gate and decreased powerhouse excavation.	5,080,000	
Grand Coulee powerhouse: To check efficiency of designed draft tubes and inlet connections.	Final designs based on hydraulic model tests increased power output valued at $40,000 annually.	200,000	Figure based on 5 years of power generation. Savings will accumulate at $40,000 annually.
Angostura Dam: To check proposed design of spillway.	Proposed design practicable but very expensive. Hydraulic tests led to much cheaper design.	500,000	New type of design will have extensive future application.
All projects in 16 years of laboratory operation: Can design of concrete and control of placing achieve safe reduction in amount of cement used?	Yes; 30,000,000 cubic yards of concrete placed with at least 1/10 barrel of cement per cubic yard less than formerly.	6,750,000	Applicable to all future dams.
Total savings accomplished by these examples.		18,372,000	

TABLE II.—*Schedule of costs for 1 year's investigations*

Bituminous investigations	$8,000
Cement and Pozzolan investigations	42,200
Concrete investigations	136,500
Demineralization investigations	20,000
Foundations investigations	23,500
Grouting investigations	11,600
Hydraulic investigations	66,700
Metals investigations	25,500
Paint investigations	21,000
Radioisotope investigations	5,000
Riprap investigations	13,800
Soils investigations	67,700
Structural investigations	58,500
Total	[1] 500,000

[1] Approximately ¼ of 1 percent of typical yearly appropriation for general investigations, construction and rehabilitation, and operation and maintenance.

Operation and Maintenance

NONREIMBURSABLE COSTS

Mr. Lineweaver. The committee will doubtless be interested, in view of the fiscal year 1953 proviso in the appropriation bill, in the determination of nonreimbursable operation and maintenance costs.

During last year's hearings before the Interior Subcommittee of the Senate Committee on Appropriations, Bureau of Reclamation representatives were closely questioned on the cost of operation of Bureau-constructed works for flood-control purposes. Particularly questioned were those flood-control operations where costs were borne by water users. These discussions are reported on pages 1547 to 1522 of the printed hearings on the Interior Department Appropriation bill, fiscal year 1953. On the basis of material presented in the hearings, a language change was inserted in the appropriation bill by the conference committee. It appears on page 9 of Public Law 470, 82d Congress, 2d session, as follows:

"Sums appropriated herein which are expended in the performance of reimbursable functions of the Bureau of Reclamation shall be returnable to the extent and in the manner provided by law."

Interpretation of the Bureau of Reclamation and confirmation thereof were set forth in a letter of August 14, 1952, from Acting Commissioner Lineweaver to Senator Carl Hayden and in a reply of August 15, 1952, from Senator Hayden to Commissioner Michael W. Straus. Copies of this correspondence are attached.

All field offices of the Bureau were advised that for fiscal years 1953 and 1954 determinations of costs to nonreimbursable functions other than flood control, including navigation, salinity repulsion, recreation, and fish and wildlife conservation, should be made only on those projects where those functions have been specifically authorized by the Congress and where our operations are actually encompassing those functions. For flood control, it was believed consistent with the Senate Appropriations Committee hearings and the presentation to the conference committee that a determination should be made wherever any operations are for the purpose of controlling flood runoffs without restriction as to capital cost allocation for that function.

Because determination of the cost of a specific purpose, such as flood control or navigation, is difficult to determine under multipurpose operations, instructions were also issued to the field offices of the Bureau that the cost of flood-control operations should be determined generally according to the following criteria:

(1) Any reservoir, to qualify for a nonreimbursable flood-control determination, must be operated for flood control or be ready to operate for flood control.

(2) Specific costs incurred or to be incurred for the sole purpose of operating for flood control will be the minimum to be apportioned for that function.

(3) Where there is a joint operation for flood control and other purposes, the following factors shall also be taken into consideration in determining the total flood-control operations and maintenance apportionment.

(*a*) The relative capital cost allocations among flood control and other purposes when such allocations exist.

(*b*) The ratio of the amount of storage used for flood control to the amount of storage used for conservation.

(*c*) The ratio of releases of water for flood control to the releases of water for other purposes.

Based on such criteria, operation and maintenance costs allocated to flood control and all other nonreimbursable functions during fiscal year 1953 and the proposed allocation of nonreimbursable costs during fiscal year 1954 are shown in the accompanying tabulation.

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Operation and maintenance—Nonreimbursable multipurpose cost determinations

Project	Flood control		Navigation		International river control		Recreation		Fish and wildlife conservation	
	Fiscal year 1953	Fiscal year 1954	Fiscal year 1953	Fiscal year 1954	Fiscal year 1953	Fiscal year 1954	Fiscal year 1953	Fiscal year 1954	Fiscal year 1953	Fiscal year 1954
W. C. Austin	$1,600	$2,060								
Boise	6,050	6,300								
Carlsbad	3,000	3,000								
Central Valley	171,239	159,337	$71,948	$69,859						
Colorado-Big Thompson	1,000	1,000								
Columbia Basin	5,000	5,000								
Hungry Horse	3,800	4,600								
Klamath	4,930	4,985								
Milk River		1,000								
Minidoka	1,000	1,000								
North Platte		1,000								
Rio Grande	16,020	13,980			$13,350	$11,650				
San Luis Valley	3,720	4,800								
Shoshone	7,310	6,265								
Yakima	4,000	4,000								
Subtotal	228,669	218,327	71,948	69,859	13,350	11,650				
Missouri River Basin:										
Angostura	1,400	2,250					$330	$520	$190	$300
Boysen	6,400	7,100					1,500	1,600	4,200	4,500
Canyon Ferry		16,500						2,000		1,300
Cedar Bluff	10,281	9,335					3,308	3,112	3,308	3,112
Dickinson	800	1,200					400	500	500	600
Frenchman-Cambridge	24,863	26,832					552	641	552	641
Heart Butte	6,000	6,700					100	100	1,000	1,200
Keyhole	3,400	4,000					900	1,100	200	300
Shadehill	4,100	4,820					70	80	930	1,100
St. Francis	12,189	11,322								
Subtotal	69,433	90,059					7,160	9,653	10,880	13,053
Total	298,102	308,386	71,948	69,859	13,350	11,650	7,160	9,653	10,880	13,053

UNITED STATES SENATE,
COMMITTEE ON APPROPRIATIONS,
August 15, 1952.

Mr. MICHAEL W. STRAUS,
Commissioner, Bureau of Reclamation, Department of the Interior, Washington 25, D. C.

MY DEAR MR. COMMISSIONER: This is to acknowledge the receipt of Acting Commissioner Lineweaver's letter of August 14 relative to the action being taken by your Bureau in regard to the annual operation and maintenance costs of flood-control operations of existing Bureau of Reclamation reservoirs. The problem was brought to the attention of the Senate Committee on Appropriations during the Bureau of Reclamation hearings on the 1953 fiscal year Interior Department appropriation bill and is fully reported on pages 1547–1552 of the printed hearings. In particular, on page 1550 there is discussion of a possible change in the administrative provision of the Appropriation Act which makes it clear that such a revision would authorize treating such annual operation and maintenance costs as nonreimbursable.

On the basis of information brought out at the hearings on May 16, 1952, the Senate Committee on Appropriations recommended and the Senate adopted amendment No. 27, which eliminated any reference in the bill to reimbursability of expenditures for operation and maintenance. This procedure enabled the Senate conferees to bring up in the conference on the Interior Department Appropriation bill the question of relieving the water and power users under all Reclamation service reservoirs and dams having flood-control activities of the cost of flood-control operations.

The House and Senate conferees unanimously adopted the language which Mr. Lineweaver had submitted to the Interior Subcommittee on Appropriations at my request at the hearings on May 16, with the express understanding that it would afford relief to water and power users from charges for the annual costs

of flood-control operations. The amendment was considered by the conferees in the light of the discussions during the hearings before the Senate Committee on Appropriations as the best means of making flood-control operations at reclamation dams and reservoirs nonreimbursable. The conferees recommended and the House of Representatives and Senate each adopted the provision which appears on page 9 of Public Law 470, 82d Congress, 2d session, as follows:

"Sums appropriated herein which are expended in the performance of reimbursable functions of the Bureau of Reclamation shall be returnable to the extent and in the manner provided by law."

In view of the clear record of congressional consideration and intent, I am pleased to know that you have already established a procedure for dealing with the problem in the manner outlined in Mr. Lineweaver's letter to me.

Yours very sincerely,

CARL HAYDEN, U. S. S.

AUGUST 14, 1952.

Hon. CARL HAYDEN,
United States Senate,
Washington, D. C.

MY DEAR SENATOR HAYDEN: In a recent discussion with you reference was made to the action being taken with regard to the annual operation and maintenance costs of the flood-control operation of existing Bureau of Reclamation reservoirs, which subject was discussed before your subcommittee on the fiscal year 1953 appropriations for the Bureau of Reclamation. I am pleased to furnish information to you on that matter.

The problem arises because reclamation law is unclear regarding the requirement for repayment of the operation and maintenance costs relating to flood-control operations. On older projects where the authorization does not include a nonreimbursable allocation to flood control, the established practice heretofore has been to require payment by water and power users of all operation and maintenance costs without distinction of that part of the annual cost attributable to flood-control operation. In a number of cases, this has resulted in an equitable burden because generally downstream areas, protected by the flood-control operation, are outside of the irrigation district that pays the annual operation and maintenance charge. A particular example of that sort is the Buffalo Bill Dam on the Shoshone project, Wyoming, which was brought to the attention of your committee by Senator O'Mahoney as reported on pages 1547–1552 of the hearings on H. R. 7176.

On some of the newer projects, where a portion of the construction cost of the reservoir has been authorized as a nonreimbursable allocation to flood control, navigation, or similar specified purposes, the practice heretofore has been to place that portion of the annual operation and maintenance cost comparable with the portion of the construction cost allocated to flood control and similar purposes in suspense pending clarification of the requirement for reimbursing such annual costs.

Pursuant to the revision in the fiscal year 1953 appropriation act of the controlling language in the administrative provisions pertaining to the Bureau of Reclamation, we now are able to meet these problems on a basis that is equitable to water and power users and consistent with established national policy governing flood control and similar projects. The annual operation and maintenance costs attributable to flood-control operations of any existing reservoirs are determined to be nonreimbursable and do not constitute a charge to water and power users. Where a portion of the construction cost is specifically authorized to be nonreimbursable in consideration of other functions, an appropriate portion of the annual operation and maintenance cost attributable to such specific function is similarly determined to be nonreimbursable.

The provisions described in the preceding paragraph apply to the existing reservoirs on the older projects as well as to those more recently constructed pursuant to the 1939 Reclamation Project Act. Specifically, current procedure will meet the problem of the Buffalo Bill Reservoir which received particular attention in your subcommittee hearings.

I appreciate the opportunity for informing you on this matter, and I will appreciate receipt of advice that the present procedure accords with the intention of your committee in initiating the revisions of the administrative provision of the appropriation act.

Sincerely yours,

G. W. LINEWEAVER,
Acting Commissioner.

TRANSFER OF PROPERTY TO WATER USERS FOR OPERATION AND MAINTENANCE

Mr. LINEWEAVER. I have a statement on the transfer of property to water users for operation and maintenance, which you requested us to submit.

(The matter referred to follows:)

It has been a long-established policy of the Congress, the Department, and the Bureau to turn over to water users' organizations for operation and maintenance completed irrigation facilities. Title and control of headworks and principal control structures of Bureau constructed irrigation facilities have, in accordance with basic reclamation laws, been retained by the Government.

When a proper contract has been entered into with a water users' organization for assumption by such organization of the operation and maintenance of a Bureau constructed irrigation system, it is essential and necessary that as a part of such transfers of responsibility that such movable supplies and equipment as spare turnout gates, valves, and similar items procured for the operation and maintenance of the project during the time such operation and maintenance was performed by the Bureau be made available to the water users' organization when it assumes this responsibility. Likewise, special equipment such as draglines, that may have been acquired for operation and maintenance purposes should be made available to the water users' organization.

Contracts which the Bureau enters into with such organization provide that the cost of all such supplies and equipment shall be fully paid for by the organization.

Although no objection has been raised from any source to this procedure, our lawyers advise that we do not have authority under existing law to transfer title of such property to the water users' organizations.

As long as title for such property remains in the Government, we must continue to maintain physical accountability for such property, and when it becomes worn out by use must dispose of it through usual procedures. Likewise, as long as title remains in the Government there is a question as to the Government's responsibility in event of accident involving the use of such movable equipment and the water user's organization is not free to replace the equipment when it becomes uneconomical to operate.

If authorization is provided, complete lists of all such supplies and equipment will be made at the time operation and maintenance functions are turned over to the water users' organization and the Bureau's property records adjusted to show the transfer. After that time, no additional work will be required by Government forces in connection with the accountability for such property.

This will provide a more businesslike procedure for the handling of this problem and will reduce the cost to the Government insofar as such movable property is concerned.

CROP PRODUCTION ON RECLAMATION PROJECTS

Mr. LINEWEAVER. Continued increase in crop production values on reclamation projects are of interest, I am sure. A statement on that subject follows:

Preliminary tabulation of the 1952 crop indicates that a harvest valued at nearly $850 million was taken from approximately 7 million irrigable acres provided a full or supplemental water supply through Federal reclamation projects. This is the second successive year the value of an annual harvest on projects now in operation approaches the total Federal investment in the irrigation features of all reclamation projects, including those not yet in operation. The 1952 crop will mark also the second consecutive year of crop values in excess of the $750 million mark and the seventh year of values in excess of the $500

million figure. The combined value of all crops harvested now stands at well over $8,800 million. Thus, the crop value of reclamation projects to date is approximately 3½ times the total Federal expenditure for all reclamation features—power, navigation, flood control, municipal water, recreation, and irrigation—and approximately 8 times the total investment in the irrigation features alone.

The true national significance of the reclamation crop is measured best in terms other than monetary. Many of the crops produced under the ideal climatic and soil environment of the irrigated West are grown only there, and the choice fruit, nut, and truck crops of this area provide a delightful and health-giving supplement to the Nation's diet. Irrigated lands in the Western States produce virtually all of the apricots, almonds, walnuts, dates, lemons, figs, prunes, and olives grown in this country. They supply about 95 perrcent of the grapes; 90 percent of the lettuce; 85 percent of the sweet cherries; 75 percent of the avocados, pears, and cantaloupes; 65 percent of the asparagus; 50 percent of the peaches; and more than 50 percent of the commercial truck crops. Many of these foods come from lands supplied water from federally financed reclamation projects.

Irrigation in the West contributes to the Nation's health and well-being also through the field crops such as hay, pasture, and the feed grains. These crops provide the feed base for the highly significant 700-million-acre western range. Much of this tremendous area supplies excellent seasonal grazing but is not usable for year-round operations because of snow, summer drought, and other factors. The feed produced on irrigated land supplies the balance between summer grazing in the mountainous sections and winter grazing on the desert areas. Reclamation projects alone produced over 10 million tons of this tremendously important feed balance in 1951. In terms of national significance, the western range and its working ally—irrigated land—provide high percentages of the Nation's beef, lamb, and wool supply.

Irrigation of western lands assures the Nation that the specialized requirements of an expanding and constantly changing agriculture will be met. Crops like castor beans from which an essential lubricating oil for modern jet-driven aircraft is extracted, or safflower through which the Nation's supply of edible oils can be expanded, can and are being incorporated into the crop plan of western irrigation farmers. Irrigation makes this flexibility possible. Flexibility at the same time offers the irrigated farmer assurance that he will be able to change his cropping plan to produce the crops most readily marketed in a constantly changing economy.

Comparative summary of acreages in cultivation and gross crop values, 1950 and 1951

Project	Net area in cultivation		Total gross crop values		Average value per acre	
	1950	1951	1950	1951	1950	1951
	Acres	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
All-American Canal, Calif.:						
Coachella division	31,000	33,489	13,437,977	18,777,683	433.48	560.71
Imperial division	440,000	440,000	56,931,231	75,249,859	129.39	171.02
Arnold, Oreg		3,267		226,055		69.19
W. C. Austin, Okla	46,856	46,322	3,460,601	5,160,452	73.86	111.40
Baker, Oreg	7,255	7,305	212,080	299,230	29.23	40.96
Balmorhea, Tex	6,938	8,086	1,090,452	1,168,935	157.17	144.56
Belle Fourche, S. Dak	55,472	54,163	2,002,602	2,328,136	36.10	42.98
Bitter Root, Mont	16,492	16,309	548,011	570,991	33.23	35.01
Boise, Idaho-Oreg	306,644	317,525	25,744,938	32,679,113	83.96	102.92
Buffalo Rapids, Mont	21,345	23,623	1,069,148	1,274,807	50.09	53.96
Buford-Trenton, N. Dak	7,625	8,003	373,460	395,489	48.98	49.42
Burnt River, Oreg	15,260	15,240	456,960	650,840	29.94	42.71
Carlsbad, N. Mex	19,007	24,717	3,281,474	4,451,096	172.65	180.08
Central Valley, Calif	504,962	546,928	103,013,738	144,729,484	204.00	264.62
Colorado Big Thompson, Colo		615,000		63,300,517		102.93
Columbia Basin, Wash	4,353	5,561	527,328	770,233	121.14	138.51
Deschutes, Oreg	89,307	90,664	9,149,779	13,087,596	102.45	144.35
Fort Sumner, N. Mex		5,188		485,959		93.67
Frenchtown, Mont	3,510	3,027	138,750	174,954	39.53	57.80
Fruitgrowers Dam, Colo	2,177	2,099	250,609	280,237	115.12	133.51
Gila, Ariz	13,845	16,011	1,497,175	2,918,148	108.14	182.26
Grand Valley, Colo	37,111	37,195	4,459,933	4,785,886	120.18	128.67
Grants Pass, Oreg		7,544		884,341		117.22
Humboldt, Nev	25,414	25,438	1,574,894	1,811,494	61.97	71.21
Huntley, Mont	25,777	25,577	1,467,071	1,399,426	56.91	54.71
Hyrum, Utah	5,760	5,674	340,674	385,629	59.14	67.96
Intake, Mont	435	473	24,258	25,294	55.77	53.48
Kendrick, Wyo	6,981	9,341	172,622	346,767	24.73	37.12
Klamath, Calif.-Oreg	203,046	190,175	17,386,810	26,110,930	85.63	137.30
Lewiston Orchards, Idaho	2,770	2,715	656,950	561,655	237.17	206.87
Lower Yellowstone, Mont.-N. Dak	49,114	50,319	2,776,052	2,814,396	56.52	55.93
Mancos, Colo	6,970	7,389	279,889	367,060	40.16	49.68
Milk River, Mont	75,321	74,912	3,578,087	3,174,471	47.50	42.38
Minidoka, Idaho	988,056	1,010,240	64,020,590	86,280,806	64.79	85.41
Mirage Flats, Nebr	11,092	11,331	676,170	688,077	60.96	60.73
Missoula Valley, Mont	636	492	16,869	13,335	26.52	27.10
Missouri River Basin project: Yellowstone division (Savage Unit), Mont	2,016	1,940	49,417	62,720	24.51	32.33
Moon Lake, Utah	60,044	58,729	1,298,362	1,544,054	21.62	26.29
Newlands, Nev	55,685	53,908	2,087,863	2,471,930	37.49	45.86
Newton, Utah	1,884	1,962	124,922	142,971	66.31	72.87
North Platte, Nebr.-Wyo	330,682	336,467	18,881,576	22,344,506	57.10	66.41
Ochoco, Oreg		7,940		923,653		116.33
Ogden River, Utah	15,929	15,964	1,253,468	2,050,767	78.69	129.09
Okanogan, Wash	3,955	3,514	1,171,948	1,127,133	296.32	320.75
Orland, Calif	17,075	17,130	1,792,928	1,821,803	105.00	106.35
Owyhee, Oreg.-Idaho	111,115	111,803	11,612,339	14,656,863	104.51	131.10
Paonia, Colo		10,063		1,012,007		100.57
Pine River, Colo	32,317	33,927	789,847	1,143,805	24.44	33.71
Pine River Indian Irrigation, Colo		9,273		333,757		35.99
Preston Bench, Idaho	4,150	4,744	303,197	388,840	73.06	81.96
Provo River, Utah	42,158	40,680	2,895,291	4,605,399	68.68	113.21
Rapid Valley, S. Dak	8,466	7,101	202,166	226,973	24.05	31.96
Rathdrum Prairie, Idaho	2,622	3,256	163,652	230,410	62.41	70.76
Rio Grande, N. Mex.-Tex	176,556	174,705	49,863,819	50,045,375	282.42	286.46
Riverton, Wyo	49,059	53,897	2,086,549	2,303,422	42.53	42.74
Salt River, Ariz	309,954	307,045	60,700,112	89,509,238	195.84	291.52
Sanpete, Utah	11,546	12,911	318,582	418,636	27.59	32.42
Scofield, Utah	15,009	14,154	817,776	991,570	54.49	70.06
Shoshone, Wyo.-Mont	73,034	76,716	3,321,120	3,509,684	45.47	45.75
Strawberry Valley, Utah	41,864	41,126	2,592,677	3,050,676	61.93	74.18
Sun River, Mont	86,047	85,810	2,144,000	2,445,775	24.92	28.50
Truckee Storage, Nev	23,213	24,206	1,564,168	2,232,740	67.38	91.90
Tucumcari, N. Mex	31,563	33,318	1,110,368	1,978,029	35.18	59.37
Umatilla, Oreg	23,151	23,316	1,193,437	1,532,916	51.55	65.75
Uncompahgre, Colo	73,427	74,207	3,724,621	6,076,028	50.73	81.88
Vale, Oreg	31,150	30,910	1,839,715	2,627,064	59.06	84.99
Weber River, Utah	90,861	90,817	7,390,754	11,786,522	81.34	129.78
Yakima, Wash	376,020	381,467	64,978,696	73,949,232	172.81	193.85
Yuma, Ariz.-Calif	58,440	57,577	11,347,157	15,537,776	194.17	269.86
Grand totals	5,189,463	5,942,013	578,237,709	821,721,665	111.43	138.29

FEDERAL TAX REVENUES FROM RECLAMATION

Mr. LINEWEAVER. I am bringing up to date our annual report on Federal tax revenues arising from reclamation developments. It is highly informative, as follows:

Based on the projected results of a sample study of 15 reclamation projects, the cumulative return to the Federal Treasury from the 70-odd projects or divisions of projects receiving water under the Federal reclamation program in 1952 now stands at over $2.7 billion. This is an amount greater than total reclamation expenditure for all project works either complete or incomplete since the beginning of the Federal reclamation program in 1902. It has accumulated from projects involving less than half of total irrigation feature costs incurred to date and thus presages accelerating revenues as the great projects of the Columbia Basin, Missouri River Basin, and Central Valley of California reach full production.

The benefits accruing to the Nation through reclamation development are also measured in terms of families served, crop production and values, livestock raised, and acres irrigated. They are expressed in rapidly expanding trade and business activity, in direct repayments to the Government by the beneficiaries of reclamation, in increased population on and adjacent to projects, and in a wide variety of other phenomena. These are all tangible, measurable benefits of a broad and lasting nature. They translate into expanding business activities in the project and surrounding areas. They filter to every State in the Union and every segment of society. They provide through this process additional economic stability to the Nation which is reflected in part by increased revenues to the Treasury in the faraway States and areas as well as on the projects themselves. The estimate of Federal tax revenues from reclamation project areas is, therefore, only a partial measure of the true contribution of basic reclamation resource development to the Nation's tax structure and to the economy as a whole.

In 1952 individual income taxes paid directly by irrigation farmers and by persons of the neighboring towns and villages whose business or employment was affected by the construction of 15 selected reclamation projects were estimated at $105 million. The aggregate individual income tax revenues from this sample study area since 1916 is estimated at over $700 million. In addition to individual tax revenues, an appropriate share of corporation and excise tax revenues collected in the same 15 project areas is directly attributable to reclamation development. Estimated receipts from these sources total nearly $400 million. The combined returns from individual and corporate tax revenues accordingly are estimated at 1.1 billion. Total Federal project construction cost through June 30, 1952, for the same projects aggregates $264 million. Thus far, Federal taxes collected have exceeded the Federal investment in irrigation features in these projects by 4½ times. Strikingly enough, these revenues are in addition to the obligation voluntarily assumed by direct users of water to repay to the Government the total cost of irrigation features allocated for repayment.

Long after project costs have been repaid fully through operations of repayment contracts the new wealth created through the Federal investment in the development of its own resources will be reflected in a continuous flow of tax revenues from the projects themselves and from the rest of the Nation as well.

PURCHASING POWER FROM RECLAMATION

Mr. LINEWEAVER. The purchasing power created in the West through expanding reclamation and related developments are illustrated in the following statement:

Evidence of the contribution of an expanding western economy to purchasing power of the Nation is assembled in the attached tabular analysis of freight shipments consigned to the irrigated West by the Eastern and Midwestern and Southern States and the freight originating in the West and designated for delivery throughout the rest of the Nation. A sample study of waybills conducted by the Interstate Commerce Commission indicates that in 1951 1,544,300 cars weighing 39,820,200 tons were shipped into the 17 Western States from the 31 other States and 2,210,400 cars weighing 71,927,900 tons were loaded in the 17 Western States for shipment to the 31 Eastern States.

Machinery, merchandise, and equipment weighing 525,000 tons were loaded into 29,200 freight cars and shipped to the 17 Western States from the New England States. The Middle Atlantic States supplied 162,000 cars weighing 4,042,800 tons and the industrial Great Lake States an additional 608,000 cars weighing 13,353,000 tons for the 17 Western States area. The East South Central and the South Atlantic groups provided 99,200 and 84,700 cars weighing 1,058,800 and 1,134,500 tons, respectively, for the same area.

Internal shipments—those originating in the 17 Western States and shipped to others of the 17-State group or within the States themselves—produced an additional whooping load of 4,585,700 carloads aggregating 186,354,000 tons.

Spot checks of rail shipments to and from reclamation project areas reveal an outstanding pattern of continuing prosperity. Railroad records at Basin, Greybull, Lovell, Powell, and Worland, Wyo. (the trade area of Shoshone project) show only 523 carloads of produce shipped out in 1910. By 1941 the produce shipment had increased to 11,793 carloads. The market for goods consumed in that area and produced in other parts of the country grew from 653 carloads in 1940 to 5,161 carloads in 1941.

In 1900, before irrigation began on the North Platte project, only 190 carloads of outgoing freight were shipped from Scottsbluff on the Burlington Railroad system. By 1910 as irrigation got under way the forwardings increased to 1,306 carloads; by 1940 they had reached 2,404 carloads; and in 1942 they totaled 3,194 carloads. The record of imports to this same North Platte area establishes an even more astounding pattern of growth. In 1900 only 283 carloads of goods from 6 States were consigned to Scottsbluff, Neb. In 1910, 14 States shipped 1,448 cars. By 1940 the market had increased to require 6,207 carloads from 37 States, and 7,144 carloads from 39 States in 1942. Checks of Burlington Railroad records have not been conducted since that time.

The constant growth of railroad shipments to and from Ada and Canyon Counties, Idaho, closely parallels the expansion of irrigation on the Boise, Owyhee, and Vale project areas served from the rail outlets of these counties. In 1951, 4,929 cars from the 31 Eastern States and 10,632 cars originating in the 17 Western States were unloaded at Ada and Canyon County terminals. Total incoming shipments of 15,561 cars compare with an outbound total of 15,935 cars. In terms of total shipments to and from the State of Idaho, as reported in the ICC study, the Ada and Canyon County market represented 46 percent of shipments originating in the 31 Eastern States and 18 percent of shipments from other States in the 17 Western States group or an overall total of 22 percent of total Idaho imports. Ada and Canyon Counties forwarding comprise a little over 11 percent of total Idaho outbound shipments.

Significantly the carloadings and tonnage figures covered in the ICC report represent rail shipments exclusively, and do not prorate the 162 billion ton-miles of shipments carried by motortrucks in the Nation during 1951.

In 1951 the crop produced on reclamation projects weighed in excess of 22 million tons. The 1952 crop should exceed 23 million tons. Parts of these crops were shipped by rail to a consuming market not otherwise supplied by the choice fruits, nuts, and vegetables growin in the ideal climate and soil environment of the irrigated West. Other appreciable segments of the bounty of reclamation projects moved by truck. The flow of outbound freight was matched by trucks and railroad cars reaching reclamation project areas loaded with the products of the mines, mills, and industries of the rest of the Nation. Trade in the 17 Western States was materially stimulated by reclamation projects. In turn the influence of the trade extended to all of the States of the Union.

TABLE 1.—*Total cars and tonnage consigned to selected western State groups from the 31 eastern States and District of Columbia*

[1-percent sample study of ICC, 1951]

31 Eastern States and District of Columbia	17 Western		11 Western	
	Cars	Tons	Cars	Tons
		2,000 pounds		*2,000 pounds*
Alabama	461	14,920	156	5,568
Arkansas	582	23,562	167	7,783
Connecticut	39	1,097	41	801
District of Columbia	1	11		
Delaware	21	477	12	277
Florida	171	5,831	60	1,937
Georgia	156	4,415	58	1,582
Illinois	2,345	53,200	1,210	26,450
Indiana	597	13,739	323	7,263
Iowa	858	24,468	316	8,048
Kentucky	128	3,205	59	1,432
Louisiana	993	29,607	202	6,430
Maine	29	732	15	419
Maryland	106	3,051	54	1,623
Massachusetts	168	2,562	134	1,913
Michigan	1,138	18,568	726	11,545
Minnesota	779	23,496	262	6,904
Mississippi	136	3,573	44	1,194
Missouri	2,399	66,608	556	11,613
New Hampshire	15	228	7	120
New Jersey	184	4,494	102	2,542
New York	456	8,896	271	5,211
North Carolina	140	2,650	84	1,503
Ohio	1,109	26,405	622	14,297
Pennsylvania	981	27,038	403	10,735
Rhode Island	6	187	4	125
South Carolina	25	556	15	402
Tennessee	267	6,417	99	2,394
Vermont	15	445	8	221
Virginia	70	1,370	46	851
West Virginia	157	4,776	93	3,170
Wisconsin	891	21,618	406	9,060
Total	15,443	398,202	6,555	153,413

Source: Carload waybill Analyses, 1951, Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

TABLE 2.—*Total cars and tonnage consigned to selected Western State groups from the Eastern and Southeastern State divisions*

(1-percent sample study of I.C.C., 1951)

Divisions	17 Western		11 Western	
	Cars	Tons	Cars	Tons
		2,000 pounds		*2,000 pounds*
New England	292	5,251	209	3,599
Middle Atlantic	1,621	40,428	776	18,488
East North Central	6,080	133,530	3,287	68,615
East South Central	992	28,115	358	10,588
South Atlantic	847	23,137	422	11,345
Unassigned by divisions [1]	5,611	167,741	1,503	40,778
Total	15,443	398,202	6,555	153,413

[1] Arkansas, Iowa, Louisiana, Minnesota, Missouri.

Source: Carload Waybill Analyses, 1951, Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

TABLE 3.—*Total cars and tonnage of outgoing freight shipments by rail—17 Western States*

(1-percent sample study of ICC, 1951)

	31 Eastern States		17 Western States		Total	
	Cars	Tons	Cars	Tons	Cars	Tons
		2,000 pounds		*2,000 pounds*		*2,000 pounds*
Arizona	430	7,751	326	11,033	756	18,784
California	3,602	83,477	2,852	76,515	6,454	159,992
Colorado	594	18,653	897	32,120	1,491	50,773
Idaho	629	16,272	833	28,620	1,462	44,892
Kansas	2,110	76,842	1,139	42,739	3,249	119,581
Montana	614	25,830	592	20,053	1,206	45,883
Nebraska	1,738	56,880	709	23,418	2,447	80,298
Nevada	64	2,984	340	15,282	404	18,266
New Mexico	509	22,636	440	15,974	949	38,610
North Dakota	1,456	65,225	87	3,186	1,543	68,411
Oklahoma	1,678	54,736	1,295	53,951	2,973	108,687
Oregon	1,489	50,096	1,708	61,890	3,287	111,986
South Dakota	777	28,298	193	6,668	970	34,966
Texas	4,499	142,677	1,520	41,756	6,019	184,433
Utah	224	10,167	1,592	79,855	1,816	90,022
Washington	1,256	41,694	1,227	42,492	2,483	84,186
Wyoming	435	15,061	929	40,576	1,364	55,637
Total	22,104	719,279	16,769	596,128	38,873	1,315,407

Source: Carload Waybill Analyses, 1951, Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

TABLE 4.—*Total cars and tonnage of freight shipments by rail—incoming and intrastate—for all commodities, 17 Western States*

(1-percent sample study of I. C. C., 1951)

	Receipts from other States in the 17 Western States		Intrastate shipments		Total	
	Cars	Tons	Cars	Tons	Cars	Tons
		2,000 lbs.		*2,000 lbs.*		*2,000 lbs.*
Arizona	638	18,745	605	34,619	1,243	53,364
California	3,335	121,693	6,904	276,630	10,239	398,323
Colorado	1,250	48,978	1,169	53,558	2,419	102,536
Idaho	585	21,393	412	18,635	997	40,028
Kansas	1,144	38,587	1,976	95,385	3,120	133,972
Montana	278	9,360	719	28,381	997	37,741
Nebraska	1,054	36,136	970	46,624	2,024	82,760
Nevada	296	10,758	26	1,653	322	12,411
New Mexico	353	11,201	63	2,670	416	13,871
North Dakota	231	6,183	597	26,465	828	32,648
Oklahoma	840	29,786	1,287	68,118	2,127	97,904
Oregon	1,130	39,191	1,749	63,822	2,879	103,013
South Dakota	355	12,595	166	6,916	521	19,511
Texas	2,732	103,032	8,043	345,021	10,775	448,053
Utah	425	16,195	1,423	75,736	1,848	91,931
Washington	1,917	66,355	2,805	115,127	4,722	181,482
Wyoming	206	5,940	174	8,052	380	13,992
Total	16,769	596,128	29,088	1,267,412	45,857	1,863,540

Source: Carload Waybill Analyses, 1951, Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

LOWER COST CANAL LINING PROGRAM

Mr. LINEWEAVER. Results from Reclamation's lower cost canal-lining program are illustrated in the following statement.

A considerable part of the water diverted for irrigation is lost by seepage from unlined canals before it reaches its destination. Records of the Bureau of Reclamation reveal that this water loss in transit amounts to 25 percent, and through some distribution systems, as much as 60 percent. Because of this loss, dams, reservoirs, and distribution systems with greater capacities are required and, consequently, the cost is more. The water in streams of most of our Western States is fully appropriated and yet thousands of acres of fertile lands still remain, which could be irrigated if sufficient water were available. The water which seeps from canals and laterals is not only wasted, but usually damages certain lower lands and necessitates the installation of expensive, hard-to-maintain drainage systems. Some seepage water returns to natural streams and is reused downstream, but in most cases seepage water is permanently lost.

Concerned over the fact that so much of the water diverted was lost in transit before it reached the farmers' fields and that the costs of making canals and laterals reasonably watertight were excessive, the Bureau of Reclamation initiated its lower-cost canal-lining program in 1946. Aimed at the development of more economical methods of seepage control, the program progressed through laboratory tests and experimental field installations. Certain phases of the work were delegated to State college experiment stations, in cooperation with the Soil Conservation Service, through memoranda of agreement with those agencies.

After 6 years' work it is concluded that the lower-cost canal-lining program has been most successful. Progress during the first 2 years was covered in a general information report entitled, "Lower Cost Canal Linings," dated June 1948. Subsequently, a number of special reports on equipment development, trial installations, cooperative tests, and condition surveys were issued. A summary report on canal linings, with emphasis on lower-cost methods for seepage control, prepared in the Office of the Chief Engineer, Bureau of Reclamation, Denver, Colo., was issued in January 1951. This report was later expanded, brought up to date through calendar year 1951, published in bulletin form for general use, and distributed to irrigation interests in the West.

The following extracts are from the report:

"1. Since 1946, more than 24 million square yards of lower-cost linings have been placed in 611 miles of new and existing canals. The amount stated includes about 18 million square yards of unreinforced concrete and mortar linings, 2 million square yards of asphaltic-type linings, and 4 million square yards of earth-material linings.

"2. Annual savings in water as a direct result of lining the above canals are estimated at 706,000 arce-feet, with a value of $1,609,000. Savings through eliminating the costs of pumping wasted water have been included in this figure.

"3. Reductions in annual maintenance costs as a result of the above lining installations are estimated at $660,000. Hard-surface linings, for example, lower maintenance costs by reducing the requirements for weed removal and silt control and by lessening the damage from burrowing animals.

"4. About 5,900 acres of waterlogged land, with an estimated value of $903,000, have been reclaimed since 1946 by lining of existing canals with lower cost linings.

"5. About 9,100 additional acres, with an estimated value of $1,345,600, have been prevented from probable waterlogging by lining of new canals with lower cost linings since 1946.

"6. Miscellaneous additional savings from lining of canals since 1946 have been realized in the amount of $380,000. These savings include those resulting from the elimination of the need for drains, reduction in the amount of excavation required for a lined section, and the elimination of the danger of slides."

In July 1952, the Chief Engineer issued another publication, Linings for Irrigation Canals. The following is taken from this report:

"After 6 years of organized effort in the Bureau's lower-cost canal-lining program, some very significant results have been achieved:

"1. The liberalization and simplification of Bureau specification requirements with respect to line, grade, and finish of hard-surface linings, have encouraged greater mechanization of placing equipment and resulted in lower construction costs and, therefore, lower bid prices.

"2. The elimination of reinforcement steel in concrete and mortar linings, except where safety is involved, has resulted in savings of 10 to 15 percent in the total cost. The efforts of personnel charged with the early direction of the lower-cost canal-lining program, resulted in the appointment of a board of consultants which subsequently recommended current Bureau design practices with respect to reinforcement steel in concrete lining.

"3. The development of subgrade-guided slip forms has made it economically feasible to line small canals and laterals with hard-surface type linings which heretofore have been prohibitive in cost. These have now been adopted in the placing of both asphaltic and portland cement concrete linings.

"4. The standardization of canal shapes and sizes, within a base width range of 2 to 6 feet, has aided in the standardization of slip-form equipment requiring less capital investment and thus contributing to lower construction costs. The standardization of canal design has also resulted in lower costs and faster completion of engineering details.

"5. A buried asphalt membrane lining has been developed which may be constructed of prefabricated strips or hot sprayed-in-place asphalt cement covered with a protective blanket of earth or gravel at cost less than half that of most hard-surface types.

"6. Greater use is being made of thick (6- to 8-foot) compacted linings of selected earth with the result that for large jobs, bid prices are usually less for this type of lining than for buried asphalt membrane. Where suitable earth material is available with a minimum of haul and the job is large enough to utilize fully mechanized equipment, this type of lining has proven to be one of the lowest in cost for dependable seepage control.

"7. New devices and test procedures have been developed for the more economical location and measurement of seepage losses. The reliability and adaptability of these methods are being established by basic investigations and field tests. Although still in the development stage, some of these methods are being used to advantage in determining where the greatest losses occur so that maximum effectiveness can be obtained from a minimum of lining.

"Evidence that lower cost seepage control and significant savings have resulted from these efforts is found in the construction records and from a comparison of bid prices in recent years. In 1946, the cost of 3- to 4-inch-thick reinforced concrete lining, based on unit bid prices, averaged close to $3 per square yard. In 1949 and 1950, the average cost of the same thickness of unreinforced concrete lining was about $2 and linings of 1½- and 2-inch thickness were being placed in small laterals and farm ditches with subgrade-guided slip forms for as little as $1.30 per square yard. The construction engineer on the Delta-Mendota Canal in California has estimated that a saving of $2,850,000 resulted from elimination of reinforcement steel in the concrete lining of that job alone. Costs on many miles of concrete and other types of lining on the Central Valley, Columbia Basin, Gila, and other projects have been similarly reduced The low cost and other advantages of buried asphalt membrane lining have brought about its general use where seepage control is required in miles of the Wyoming Canal, Riverton project, and laterals of the Columbia Basin project. This type of lining has also been found very economical and practical for the control of seepage in operating systems where the eroded oversize unlined section makes the cost of a hard-surface lining prohibitive."

The expenditure for the lower-cost canal-lining program is small compared to the savings which have been realized. The annual allocations for this program have varied from $158,000 to $400,000. Annual savings in water and reduced maintenance costs amount to an estimated $2,269,000. Increased land valuation and miscellaneous savings, which result from reclaiming waterlogged lands and preventing lands under new canals from becoming waterlogged, are estimated to total more than $2,628,000.

The current 1953 fiscal-year program provides for an expenditure of $158,150 for continuing the lower-cost canal-lining work. Special attention is being centered on the development of an underseal for canals in service. Where continuous use of a canal is necessary, the matter of installing linings is difficult and means of injecting asphalt emulsions into the perimeter of an operating canal are being investigated and studied. Previous lining installations are being observed for performance and additional test sections of various types are being constructed.

Although a great amount of progress has been made, there is a real need for continuing the lower-cost canal-lining program. Existing experimental installations must be observed over a period of years, deficiencies corrected through additional experimental and design practices, and further development pursued. Efforts to arrive at methods for predetermining the need for seepage control before distribution systems are constructed have as yet only scratched the surface of the problem. The need is great to continue such work and to relate it to seepage losses by actual measurement after construction. Further improvement in equipment and placing methods are quite possible and the standardization of sizes, shapes, and design practices should be furthered. The collection of cost data for maintenance as well as for construction is required to properly compare the costs of various linings over their years of serviceable life.

SETTLEMENT AND DEVELOPMENT FARMS

Mr. LINEWEAVER. The settlement program, including development farm activities are shown in the following summaries:

SETTLEMENT PROGRAM OF THE BUREAU OF RECLAMATION

One of the chief objectives of the Bureau of Reclamation is the creation from public land of new irrigated farm units and the successful establishment of settlers on those units. In the early history of the Bureau a major portion of its construction work was done to supply irrigation water to public lands, although a considerable amount of privately owned land was also supplied with irrigation water through Bureau-constructed facilities. During recent years, the major portion of the land supplied with water through facilities constructed by the Bureau has been privately owned, since the amount of public land which is of suitable quality for irrigation and which can be supplied with water is becoming relatively scarce. Government-owned farm units on reclamation projects which are made available to settlers consist of either public land or land which has been acquired by the Government for settlement purposes under specific legislative authority, such as certain lands on the Columbia Basin project and the Gila project. Public land farm units are made available to settlers through the process of homesteading while land acquired by the Government for settlement purposes is sold to settlers at its appraised value.

From the close of World War II to January 1, 1953, 30 land openings were held. A total of 1,186 farm units constituting 91,715 acres were made available to settlers in these openings. Of this number, 783 farm units comprising 76,703 acres of public land were made available through the process of homesteading while 194 full-time farm units and 109 part-time farm units comprising 15,102 acres of land on the Columbia Basin project were made available for sale to settlers. During the last half of fiscal year 1953, 91 farm units comprising 8,650 acres of public land will be made available to settlement by homesteading while approximately 193 farm units comprising 16,887 acres will be made available for sale to settlers.

The estimated number of acres and farm units that will be opened to settlement on reclamation projects in fiscal year 1954 are as follows:

Project	Acres	Farm units
Minidoka project, Idaho	10,000	100
Columbia Basin project, Washington	7,050	100
Klamath project, Oregon-California	6,700	75
Gila project, Arizona	5,700	39

In all land openings preference is given to veterans. The applicants must be of good character and industry and meet certain minimum requirements as to farm experience and capital. Of recent years a minimum of 2 years of farm experience has been required in all land openings. The amount of capital may vary from project to project depending upon the amount of land leveling required, but usually ranges from $3,000 to $5,000. The capital may consist of cash or assets usable on the farm such as livestock or equipment.

The demand on the part of veterans for farm units greatly exceeds the supply of units available. In the 30 land openings conducted since the close of World

War II, 47,431 applications have been received for the 1,186 farm units, or an average of 40 applications per unit. In several recent openings the applications per unit have exceeded 100 and on one recent opening on the Columbia Basin project 291 applications per farm unit were received. This is concrete evidence that the demand for farm units is far from being satisfied.

Work entailed in settlement

A vast amount of detailed work is involved in connection with opening land to settlement. The reclamation laws provide that farm units must be of sufficient size to support a family. It is therefore necessary that studies be made on each project, where land openings are to be conducted, to determine the size of farm units. These studies must consider the productive capacity of the land under the existing climatic conditions, the farm products which probably will be produced as affected by climatic and marketing conditions, and the probable income which will be available for family living after deducting farm expenses, including the annual cost of irrigation water and the repayment to the Government of the construction cost of the project allocated to irrigation.

After the sizes of farm units are determined, the next step is the layout of the farm units. In former years most farm units were laid out on rectangular lines in conformance with the rectangular system of public land surveys. It was found that many of the farm units so laid out were not adapted to the most desirable layout of farm fields and that more consideration should be given to the layout of farm units in conformance with topography even though such units would cross rectangular section subdivisions. Farm units should be laid out in conformance with the project distribution system in such manner that the land can be watered from one farm turnout per farm where possible.

Following farm unit layout it is necessary to officially describe each unit. Where farm unit boundaries do not conform to the rectangular system of public land surveys it is necessary to make supplemental engineering surveys to properly describe the farm units. On public land, supplemental surveys must be made in accordance with specifications of the Bureau of Land Management and supplemental surveys must be approved by that Bureau.

Farm unit plats officially describing the farm units must be prepared in accordance with prescribed standards. Recently arrangements have been made for the Commissioner to approve these plats under authority delegated by the Secretary.

A public notice is issued in connection with each land opening. While many of the provisions are standard for all notices, each notice must contain specific information applicable to that project alone such as construction charges, water charges, and other items peculiar to the project. As these are official notices to the public a careful check must be made to determine that they are in accordance with applicable provisions of any specific laws or the provisions of any applicable repayment contracts.

After the public notice is issued, copies of the notice, together with application forms, are made available to the public. The applications received must be processed, including the drawing to determine the order in which the applications will be examined and the detailed examination of the applications to determine whether applicants are qualified. Qualified applicants must then be conducted over the project to permit selection by them of the farm units they desire, after which certificates of qualification are issued in the case of public land, or sales contracts are signed in the case of Government-acquired land.

Settlement phases on private land

While, with the exception of the Columbia Basin project, the Bureau does not have authority to lay out farm units on privately owned land, it does have the problem of designing the distribution system and locating the farm turnouts to best serve the existing land ownerships. Where the ownership consists of more land than can be served with water under the land limitation provisions of reclamation laws and where the landowner plans to subdivide his present holdings into several smaller units there exists the problem of designing the distribution system to serve these proposed new units. In such cases the layout of the distribution system, including the location of farm turnouts on private land, presents problems similar to those on public land.

Development Farms

Development farms are a vital part of the settlement program on new areas being developed for irrigation. The field-scale operations demonstrate to the inexperienced irrigation farmers the layout of the most practical farm irrigation systems, the best methods of irrigation, the crops best adapted to the area, and the most effective cultural practices. The research conducted by cooperating agricultural agencies furnishes valuable information to the new settlers. The demonstrations and research overcome many of the obstacles which caused hardships and often failures of settlers on earlier developed projects.

The need for development farms was first recognized and their establishment recommended in the Columbia Basin Joint Investigations reports resulting from studies conducted by the Bureau of Reclamation, the State College of Washington, and the United States Department of Agriculture. The State colleges lacked funds to establish and operate the proposed farms, and representatives of the Bureau of Plant Industry stated that they did not have authority to do so. A solution to the problem was reached by working out agreements among the Bureau of Reclamation, the State agricultural colleges, and the research agencies of the Department of Agriculture based on the ability of the several interested agencies to assist in the program.

Development farms are established from 2 to 5 years in advance of settlement where possible in order that much of the necessary experience and information will have been obtained when the new settlers arrive. The farms are located in areas which best represent the soils and other conditions of the new project, and they conform to the number of acres considered necessary for a family-sized farm unit. The sites are chosen and the plans for the development and operation of each farm are formulated in cooperation with the interested agencies.

The major portion of each farm is devoted to field-scale demonstrations of approved farm irrigation systems, irrigation methods, kinds and varieties of adapted crops, cultural practices, weed control, farm drainage, and solutions to other problems with which new irrigation farmers are faced. From 10 to 25 percent of each farm is set aside for research which is conducted by State college experiment stations and cooperating agricultural agencies, including, in most cases, the Bureau of Plant Industry and the Soil Conservation Service. The research may include investigations regarding fertilizer requirements, handling of problem soils, water requirements, plant diseases, insect pests, and other problems peculiar to a particular area. Sprinkler irrigation has been investigated and demonstrated, in cooperation with other agencies, on farms located in areas where topography or other factors has indicated that this method may prove desirable. After methods have been developed from the research and thoroughly tested they also are demonstrated on the farms.

While several methods of managing the farms have been tried, the one generally found to give the best results is to lease the farm to a carefully selected experienced farmer as soon as it is developed and the buildings have been constructed. The farms thus become more nearly self-supporting and the demonstrations and information are more readily accepted by the settlers than when the farms are operated by Bureau employees. Most of the regions are converting their farms to this type of management as soon as possible.

There are 14 farms in operation at the present time. Four of these are on the Columbia Basin project in region 1, and 10 farms are on the Missouri River Basin project in regions 6 and 7. Two additional farms are being developed on the Wellton-Mohawk division of the Gila project, Arizona, in region 3. At least 1 farm is proposed for the Green River Basin of Wyoming in region 4 and about 15 more farms are proposed, principally for the Missouri River Basin project, most of which will be located in the States of North Dakota, South Dakota, Nebraska, and Kansas in regions 6 and 7. At least 2 more may be established on the Columbia Basin project in Washington.

The agencies responsible for the development farms work closely with the State college extension services to be certain that the information from research findings and demonstrations is properly disseminated to the new settlers. Hundreds of farmers attend the annual field days and tours at which representatives of the Bureau and the cooperating agencies explain the work in detail. The settlers are encouraged to visit the farms at any time during the year to obtain information. Pamphlets are prepared and distributed which supply data on the crops raised, yields, and other pertinent matters. In addition to project farmers, the development farms benefit college and high school students who visit the farms with their instructors.

It is agreed by the Bureau, State colleges, and other cooperating agencies that the results of the development farms program have even exceeded expectations. While many of the results are difficult to evaluate on a dollar basis, it is very apparent on the projects where development farms are located that the demonstrations have been considered and followed by the new farmers, many of whom never before have operated an irrigation farm. The program has furnished the necessary knowledge to make farming operations a success from the start, rather than having to depend on trial and error methods, which can end in disastrous results. The several agencies concerned are in unanimous agreement that the development farm program should be continued and it is planned to extend this phase of settler assistance to new projects or units of projects, where needed, as they are authorized for development. This is particularly true for the new units of the Missouri River Basin project where the farms will not only demonstate the conversion of lands from dry farming to irrigation farming, but also will show the benefits of irrigation farming in the semihumid areas.

RETAIL SALES AND RECLAMATION

Mr. LINEWEAVER. Further evidence of the widespread results from reclamation is illustrated by a retail sales survey of the West as follows:

Retail sales in the 17 Western States during 1951 rose to almost $40 billion and averaged out at $1,139 for every man, woman, and child. Retail sales for the Nation during the same year averaged $1,023 per capita. The average of the 11 Western States was $1,209 and the 3 Pacific States $1,240 per capita.

This retail market was nearly three times greater than the total United States exports for the same year and provided an outlet for the textiles of the East and New England, the technical equipment and machinery of the Middle Atlantic and New England States, the automotive equipment and farm machinery of the industrial Great Lakes States, the tobacco and tobacco products of the Southeast, and for the assorted goods and services offered to the retail trade by the multitudinous suppliers of the Nation's markets. Much of the western market has been made possible by the establishment of prosperous communities upon irrigated land.

The increased purchasing power of the Central Valley project in California provides an excellent case study of the influence of resource development on retail sales. This project alone is estimated to provide a new market for a million pairs of shoes each year, part of which will be made in Massachusetts, New York, or Pennsylvania; for $10 million worth of tobacco products which probably will come from North Carolina, Virginia, Kentucky, Florida, and Pennsylvania; for 8,000 vacuum cleaners, 8,000 refrigerators, 8,000 ranges, 8,000 washing machines, 8,000 radios and television sets which will come from many States but largely from Ohio, Michigan, Illinois, Connecticut, New Jersey, New York, and Pennsylvania.

The increased purchasing power of this one project translates into an annual market for 15,000 new cars, some from Detroit and South Bend and other cities, but many assembled in California from parts manufactured in Michigan, Indiana, Illinois, Ohio, and Wisconsin; for hundreds of thousands of dollars' worth of textiles from New England and the South Atlantic States; and for thousands of automobile tires and accessories, home appliances, office machines, and all the assorted "gadgets" of the day, produced in all corners of the country.

The water conserved and made available by this 1 project is enough to supply the equivalent of well over 6,000 new farms. These farms would require an initial investment in more than 8,000 tractors, 70 percent of which come from Pennsylvania, Illinois, and Wisconsin; more than 7,500 trucks fabricated in Michigan, Wisconsin, and Indiana, though perhaps assembled in California; around 1,000 hay balers, spray outfits, and combined harvesters, etc., produced mainly in Illinois, Wisconsin, Pennsylvania, Tennessee, Iowa, and New Jersey; and thousands of plows, harrows, cultivators, mowers, and other implements originating largely in the Great Lakes, East Central, and South Central States. Annual replacements would continue to provide an active market.

Each reclamation project exercises an influence on the local market and through it, on the markets of the Nation as a whole. In 1951 the influence of the western market on the total national economy amounted to nearly $40 billion.

Distribution of population and retail sales by State group and United States total

Item	United States totals or averages	31 Eastern States	17 reclamation States, by group		
			3 Pacific	11 Western	17 Western
Estimated 1952 population	152,908,600	118,099,300	14,995,900	20,169,600	34,809,300
Percent of United States population	100	77.2	9.8	13.2	22.8
Retail sales:					
Per person	$1,023	$989	$1,240	$1,209	$1,139
Total	$156,439,219,000	$116,799,387,000	$18,590,105,000	$24,394,967,000	$39,639,832,000
Percent of United States sales	100	74.7	11.9	15.6	25.3

Source: Consumer Markets, SRDS, 1952-53.

Retail sales summaries, by State and State group, 1951

State and group	Estimated 1952 population	Estimated retail sales		
		Per house	Per person	Total
Arizona	775,600	$4,025	$1,131	$876,877,000
California	10,979,100	4,072	1,282	14,080,171,000
Colorado	1,347,000	4,020	1,188	1,600,192,000
Idaho	595,300	4,080	1,174	698,711,000
Kansas	1,957,900	3,788	1,149	2,249,394,000
Montana	594,300	4,208	1,251	743,282,000
Nebraska	1,327,000	3,962	1,179	1,564,659,000
Nevada	165,400	4,769	1,498	247,836,000
New Mexico	697,500	3,077	800	558,245,000
North Dakota	617,500	4,504	1,179	727,997,000
Oklahoma	2,233,600	2,955	878	1,960,829,000
Oregon	1,567,000	3,583	1,129	1,768,865,000
South Dekota	653,700	3,972	1,113	727,880,000
Texas	7,850,000	3,594	1,021	8,014,106,000
Utah	704,000	3,710	1,013	713,113,000
Washington	2,449,800	3,616	1,119	2,741,069,000
Wyoming	294,600	4,289	1,244	366,606,000
Total, 17 Western States	34,809,300	----------	1,139	39,639,832,000

Source: Consumer Markets, SRDS, 1952-53.

Retail sales summaries, by State and State group, 1951

State and group	Estimated 1952 population	Estimated retail sales		
		Per house	Per person	Total
California	10,979,100	$4,072	$1,282	$14,080,171,000
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Washington	2,449,800	3,616	1,119	2,741,069,000
Total, 3 Pacific States	14,995,900	----------	1,240	18,590,105,000
Arizona	775,600	4,025	1,131	876,877,000
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Colorado	1,347,000	4,020	1,188	1,600,192,000
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Wyoming	294,600	4,289	1,244	366,606,000
Total, 11 Western States	20,169,600	----------	1,209	24,394,967,000

Source: Consumer Markets, SRDS, 1952-53.

PARTICIPATION OF OTHER AGENCIES OF INTERIOR DEPARTMENT IN MISSOURI RIVER PROGRAM

Mr. LINEWEAVER. We will submit also, Mr. Chairman, the justifications for the estimates of the other agencies in the Department in the Missouri Basin program. The funds appropriated are transferred to these agencies.

Mr. JENSEN. That will be fine.

(The material requested follows:)

Fiscal year 1954 program—Distribution of funds to participating agencies

Divisions, units, and locations	Bureau of Land Management	Bureau of Mines	Fish and Wildlife Service	Geological Survey	National Park Service	Bureau of Indian Affairs
Phase A, units under construction:						
Bostwick division, Nebraska-Kansas			$4,000	$8,000	$11,000	
Canyon Ferry unit, Montana			2,000	6,000	8,000	
Cedar Bluff unit, Kansas			1,000	3,000		
Crow Creek unit, Montana						
Frenchman-Cambridge division, Nebraska			4,000	9,000	1,200	
Heart Butte unit, North Dakota			2,000	6,000	7,000	
Jamestown unit, Montana-North Dakota			2,000	8,000	7,000	
Kirwin unit, Kansas			1,000	3,000	3,000	
Lower Marias unit, Montana			2,000	5,000	3,000	$9,000
Missouri diversion unit, Montana-North Dakota				1,000	2,000	26,000
Rapid Valley unit, Wyoming-South Dakota				4,000		
St. Francis unit, Colorado-Kansas				2,000		
Shadehill unit, South Dakota			2,000	6,000	3,000	
Transmission division, various						
Webster unit, Kansas			1,000		4,000	
Drainage and minor completion program			4,000		18,000	
Total, phase A, units under construction			25,000	61,000	67,200	35,000
Phase B, units ready for construction:						
Bluff unit, Wyoming				1,000		
Charley Creek unit, Montana						
Glendo unit, Wyoming			3,000	3,000	12,000	
Glen Elder unit, Kansas						
Hanover unit, Wyoming				1,000		
Helena Valley unit, Montana						
Nickwall unit, Montana						
Owl Creek unit, Wyoming				1,000	3,000	
Sargent unit, Nebraska				2,000		
Wilson unit, Kansas					6,000	
Yellowtail unit, Montana				3,000	17,000	
Subtotal, phase B, units ready for construction			3,000	11,000	38,000	
Phase B, units being prepared for construction			23,500	98,000	12,500	3,000
Total, phase B			26,500	109,000	50,500	3,000
Phases C and D, continuing work on the general plan of development	$350,000	$150,000	298,500	3,130,000	182,300	262,000
Total, Missouri River Basin project	350,000	150,000	350,000	3,300,000	300,000	300,000

CONSTRUCTION AND REHABILITATION, MISSOURI RIVER BASIN PROJECT

BUREAU OF LAND MANAGEMENT

Summarized financial data

Total obligations to June 30, 1952		$2,992,836
Allotment, fiscal year 1953	$325,000	
Prior year unobligated balance	59,123	
Total obligations, fiscal year 1953		384,123
Allotment, fiscal year 1954	350,000	
Total obligations, fiscal year 1954		350,000

JUSTIFICATION OF ESTIMATE

Land classification

Under the Missouri Basin program of the Department, approximately 9,155,000 acres of public domain will have been classified and an inventory made of the land resources as of June 30, 1952. This acreage represents slightly less than one-half of the approximately 19,000,000 acres of public land administered by the Bureau of Land Management in the Missouri River Basin. It is essential that this classification proceed to completion concurrently with other departmental investigations of land and water resources, to permit an effective and integrated departmental program. Water resources have received the greatest attention in the past whereas land and mineral resources have been comparatively neglected. The significance of public lands to such problems as flood control, soil erosion and siltation requires that upstream watershed treatments be carried on concurrently if not in advance of downstream developments. Public lands found to be unsuitable for public programs and having no multiple uses will pass to private ownership and to the tax rolls with the consequent reduction of Government expense.

Approximately 1,300,000 acres of public land can be classified and inventoried under this budget. The land classification program allows for the continuation of approximately the same organization.

Cadastral surveys

The reestablishment of original corner positions and definite identification of section and property corners is required by the Bureau of Reclamation and other governmental agencies to determine land boundaries, actual acreage, and to establish a horizontal control survey net in connection with each irrigation and development project in the basin. Reestablishment of these corners is necessary because a large percentage of them have been obliterated since the original survey 60 to 80 years ago. The absence of officially established corners and boundaries is detrimental to the development program in the basin.

The program for 1954 will be directed principally to the following units:

	Acres
Kansas:	
Webster	30,000
St. Francis	47,000
Wilson	35,000
	112,000
Nebraska:	
Lower Platte area	177,000
Gordon	5,000
	182,000
Wyoming: Glendo	58,000
North Dakota: Heart River	23,040
South Dakota:	
Oahe	160,000
Fort Randall	7,000
Greenwood	16,000
LaFromboise	7,000
LaRoche	6,000
Pierre	5,000
Running Water	8,000
Tower	8,000
Yankton	8,000
	225,000
Total acres	600,040

BUREAU OF MINES

Summarized financial data

Total obligations to June 30, 1952		$1,027,067
Allotment, fiscal year 1953	$150,000	
Prior year balance available	12,929	
Total obligations, fiscal year 1953		162,929
Allotments, fiscal year 1954	150,000	
Total obligations, fiscal year 1954		150,000

JUSTIFICATION OF ESTIMATE

During fiscal year 1954, the Bureau of Mines plans to continue its work on the development and effective utilization of the mineral resources of the Missouri River Basin area. This work is an integral part of the broad program for the development of all resources of the area. The program is designed to insure that available and potential resources contribute their maximum share in an improving industrial environment occasioned by the public works and related changes in the basin's economy. Since the Missouri River Basin's natural resources include many largely undeveloped mineral reserves, the importance of the Bureau's program of minerals and fuels investigations cannot be overemphasized.

Much of the Bureau's program is concentrated on the development of mining, preparation, and utilization methods to achieve maximum effectiveness in utilizing the basin's vast reserves of low-rank solid fuels. In fiscal year 1954, the Bureau's program will include continued research on the storage and utilization of low-rank solid fuels and a survey of coal and lignite resources and of established and potential coal industries in special areas. Petroleum and natural-gas investigations will be continued, including research on the utilization and recovery of the byproducts of "black oils," as well as surveys of petroleum and natural-gas industries in areas undergoing study by Interior agencies.

Also, increased petroleum and natural-gas discoveries in the Missouri River Basin, particularly in the Williston, Denver-Julesburg Basins (geologic), have been so great that much engineering work needs to be done to keep up with the new petroleum and natural-gas discoveries. Detailed reports are needed by the construction agencies (Reclamation, the Corps of Engineers, and Agriculture) in order to intergrate their work in providing water, power and food to the expanding industries of the basin.

To illustrate the rapid development, a survey was completed in September 1952 in the Platte River Basin which covered 99 oil and gas fields, approximately one-half of which were discovered since July 1949.

The ultimate objectives of the investigations of metallic and nonmetallic minerals in the basin is a detailed compilation of facts on all known mineral resources and a summary of all technologic information on such resources, after testing and demonstrating all possible means of utilizing their products. The 1954 program for these commodities will include: (1) investigation of the utilization of low-grade South Dakota iron ores; (2) county surveys of mineral resources and production in Montana; (3) field examination of metallic and nonmetallic mineral deposits; (4) investigation of the great variety of clay deposits in the basin; and (5) the study of the application of physics to rock structures at Missouri Basin construction projects.

FISH AND WILDLIFE SERVICE

Summarized financial data

Total obligations to June 30, 1952	$2,508,500
Allotment, fiscal year 1953	400,000
Total obligations, fiscal year 1953	400,000
Allotment, fiscal year 1954	350,000
Total obligations, fiscal year 1954	350,000

JUSTIFICATION OF ESTIMATE

Among the several provisions of the act of August 14, 1946 (60 Stat. 1080) is one designed to promote more effectual planning of water-use projects by requiring agencies engaging in water resources development to consult with the Fish and Wildlife Service with a view to preventing damages to fish and wildlife

resources which may occur through the impounding, diversion, drainage, or other control of water. The act also provides that costs of measures to prevent damages shall become an integral part of project costs.

The Missouri Basin project, now being planned and constructed by the Bureau of Reclamation and the Corps of Engineers, is a multiple-purpose development designed primarily to provide for flood control, irrigation, and hydropower production in that basin. The Fish and Wildlife Service is working with these two agencies so that the Missouri Basin project is constructed with a minimum of damage to fish and wildlife and so that, wherever practicable and consistent with the primary purposes of project units, measures for fish and wildlife conservation are incorporated in plans for individual features of the project.

In order to carry out this activity effectively, the Service makes inventories of fish and wildlife resources in the various project areas, studies the projects in detail, and determines to what extent the projects would damage or benefit fish and game. Where it is found that damages would be substantial, possibilities for modifying the project are pointed out to the construction agency. Project plans can often be modified so as to reduce damages to or increase fish and wildlife resources with minor cost to the project, particularly if project studies are in the early planning stages. In all of these activities the Service works closely with the construction agencies and appropriate State game and fish departments.

The Service activities outlined above involve many diverse studies, such as the effects of irrigated agriculture on various forms of wildlife; the effect of reduced stream flows on both warm and coldwater fisheries and fur animals; the effect of large reservoirs on big game animals such as the displacement of elk and deer from critically needed ranges and interference with their normal migrations; the value of fish and wildlife resources to the economy of local communities and the States; the economic and recreational value of fish and game in relation to regional and national needs; and requirements for new Federal or State wildlife refuges and fish hatcheries as they may be needed to complement the construction of water-resources projects planned by other agencies.

The sum of $350,000 is the minimum necessary for the Service, working under provisions of the act of August 14, 1946 (60 Stat. 1080), to keep abreast of the water-use development plans of various Federal agencies working in the Missouri River Basin. No other funds, either regular appropriations or transfer funds, will be available for this work.

Geological Survey

Summarized financial data

Total obligations to June 30, 1952		$20,433,983
Allotment, fiscal year 1953	$3,500,000	
Prior year balance available	110,631	
Total obligations, fiscal year 1953		3,610,631
Allotment, fiscal year 1954		3,300,000
Total obligations, fiscal year 1954		3,300,000

JUSTIFICATION OF ESTIMATE

Ever since the Missouri River Basin project was started several years ago, the collection, analysis, and interpretation of basic data on the water, land, and mineral resources of the basin, and the preparation of topographic and geologic maps and reports, by the Geological Survey have lagged behind the planning and construction activities of the action agencies of the Government for the development and use of those resources. It would have been decidedly advantageous, and in the interest of overall efficiency and economy, if the basic data program of the Survey could have been started 5 or 10 years before the planning work of the action agencies instead of coincidently with them. That would have prevented serious handicaps and delays in the development work.

Although the Missouri River Basin program of the Geological Survey was originally designed for the primary purpose of providing basic data essential to the development of the water, land, and mineral resources of the Basin, the information so obtained also contributes substantially to bolstering the national economy during the present emergency. The information has been very useful in furthering industrial mobilization and stimulating the production of civilian and military supplies that are so vital to the National defense program.

On account of the reduced funds available for fiscal years 1952 and 1953, the rate of progress on the basic data program of the Geological Survey is now about 25 percent under the 1951 rates. Even though the construction program of the action agencies of the Government may have to continue to be curtailed drastically during fiscal year 1954 under the present international emergency, the Survey's program should be carried on at a scale more nearly commensurate with the need for the basic data in order to reduce the disparity between supply and demand.

Item	Base 1954	Estimate 1954	Increase (+) or decrease (−)
(1) Topographic surveys and mapping	$2,072,233	$1,715,000	−$357,233
(2) Geological and mineral resource surveys and mapping	379,417	325,000	−54,417
(3) Water resources investigations	1,038,294	1,150,000	+111,706
(4) General administration	120,687	110,000	−10,687
Total	3,610,631	3,300,000	−310,631

(1) Topographic surveys and mapping

Topographic maps present a symbolized portrayal of the natural and man-made features existing upon the land surface. They afford a representation of drainage and of the relief to be encountered in the particular areas and delineate the roads, railroads, dwellings, and other cultural details of the locality. Adequate topographic mapping its a prerequisite and an indispensable adjunct to the general planning and preconstruction studies which occur in the early stages of programs for the utilization of land and water resources. Topographic maps, therefore, are essential in the systematic development of the Missouri River Basin.

The need for mapping in connection with the development program for the basin is further accentuated by the fact that most of the proposed projects are located in areas most sparsely covered by maps. An expanded mapping program is urgently needed to provide the basic information so vital to economical progress in the development of the Missouri River Basin for irrigation, flood control, hydroelectric power, water supply, navigation, and industry. The topographic maps must be made available at the earliest possible date in order to eliminate the need for many special surveys and assure a substantial reduction in the cost of the entire basin program.

During fiscal years 1953 and 1954 topographic mapping operations are planned for a total of 29 projects in 9 States. This program represents the primary and urgent mapping requirements of the two construction agencies, the Bureau of Reclamation and the Corps of Engineers. Field surveys and office compilation will proceed rapidly on all the projects already under way. Mapping on some projects is just beginning so that the basic step of obtaining aerial photography is in progress or is yet to be accomplished.

Extensive field operations to maintain support of the office steromapping capacity are planned for the summer period in order to take advantage of favorable climatic conditions. The summer work will be supplemented by winter field activity as far north as economically feasible. Vigorous prosecution of this expanded program will be required to provide the topographic maps needed prior to development of basin resources.

(2) Geologic and mineral resource surveys and mapping

The program of geologic mapping and mineral resource investigations is coordinated with the other agencies of the Department of the Interior. To provide adequate basic data on the nature of the earth materials, studies are contemplated (1) in areas where development is planned by the Bureau of Reclamation, (2) in mineral resource areas whose development will contribute to the welfare of the basin and in support of Bureau of Mines' investigations in such areas, (3) in areas of public lands and Indian reservations where appraisal of mineral resources and accurate knowledge of their occurrence and distribution will stimulate mineral development, and (4) in other areas where basic geologic data pertaining to construction problems and mineral resources are needed by other agencies.

Engineering and general geology.—Geologic investigations and mapping to determine surface and bedrock conditions and sources of construction materials must be continued throughout the basin but at an accelerated rate to keep pace with construction plans and operations of the Bureau of Reclamation and other Federal, State, and local agencies. Geologic investigations and mapping to obtain additional basic data on the nature of the glacial deposits that blanket extensive areas of development in the basin to obtain additional basic data for soils studies and to explore the areas in which unknown resources may be found must be continued, but more rapidly to expedite the accumulation of basic data bearing on these fundamentally important problems.

Fuels and mineral resources.—Geologic investigations and mapping to determine the occurrence and distribution of fuel and mineral resources throughout the basin must be continued, but at an accelerated rate in order that adequate data soon may be obtained on which to base a sound program for their conservation and development. Such work is particularly urgent in and near areas where construction already is planned. Preparation of preliminary summary appraisals of all mineral resources, in some instances by States, should be initiated or expanded to provide a sound basis for current planning of Federal, State, and local agencies. The vital roles of coal, oil, and gas in the development and economic welfare of the basin are increasingly apparent. As data on these fuel resources are quite inadequate, investigations and exploration must be continued as rapidly as possible. Similarly, as data on both nonmetallic and metallic mineral resources are fragmentary, investigations of known reserves of these resources must be continued, with emphasis at present on phosphate rock, bentonite, chromite, and certain pegmatite minerals, but without neglecting other mineral resources; and search for new reserves must be pressed.

(3) Water resources investigations

Adequate information upon the quantity and distribution of the surface-water supplies, the occurrence and availability of ground waters, the sediment loads of the streams, and the chemical quality of both the surface and ground waters, is indispensable for planning, constructing, and operating all types of works for the development and utilization of the water resources of the Missouri River Basin. An indication of the great unfilled need for such basic data is the recent action of a group of representatives of the Bureau of Reclamation and 9 other action agencies of the Government, who, after a joint study of the needs of those agencies, recommended that the Geological Survey construct and operate 615 additional stream-gaging stations in the Missouri River Basin. To meet these needs only in part, and to supply other requests by the action agencies for other types of basic water data, Geological Survey plans to carry on the following water investigational program during fiscal year 1954:

Surface water investigations.—The program for fiscal year 1954 will include continuing 280 of the present 283 stream-gaging stations and 3 stations expected to be installed during the remainder of fiscal year 1953. Increased funds are requested to rehabilitate 10 existing stations, and to establish 12 stations at new sites to partially meet the recommendations and needs of the action agencies for additional basic data. The surface water facts will be compiled and analyzed in order to make them most useful and applicable in the development of the Missouri River Basin.

Sediment investigations.—During 1954, investigations of the sediment loads of streams will be continued at 85 of the 90 stations in the present program. Special studies will be continued on the causes and sources of erosion and on the aggradation or degradation of stream beds and banks which are extremely important in the successful development of land and rivers. Increased funds are requested to establish 10 stations at new sites to furnish additional data on sediment load and for further special studies which are urgenly needed for the design and operation of river-development projects.

Chemical quality investigations.—Investigations will be continued during 1954 for determining the chemical quality of the water of streams at about 75 of the present 78 stations. Also, studies of the chemical quality of ground waters at about 40 reclamation projects or other locations in the basin will be conducted. Increased funds are requested to establish 5 stations at new sites for the collection of urgently needed chemical quality data.

Ground-water investigations.—Investigations of ground-water resources will be continued during 1954 in the locality of 53 projects of the Bureau of Reclamation and other action agencies of the Government. Only general investigations are now being made at most of those places. Increased funds are re-

quested for 1954 to permit more detailed and comprehensive investigations of present areas and extension to other areas to provide the information needed for the many ground-water problems which arise in the construction of reservoirs, irrigation and drainage of lands, and excessive withdrawals of ground water for various uses.

NATIONAL PARK SERVICE

Summarized financial data

Total obligations to June 30, 1952		$1,504,601
Allotment, fiscal year 1953	$300,000	
Prior year balance available	95,399	
Total obligations, fiscal year 1953		395,399
Allotment, fiscal year 1954	300,000	
Total obligations, fiscal year 1954		300,000

JUSTIFICATION OF ESTIMATE

Recreation surveys and planning, $135,000

The 1954 fiscal year work schedule will be a continuation of field investigations, surveys, and planning for Reclamation projects in the Missouri River Basin program. The tentative schedule prepared in cooperation with the Bureau of Reclamation calls for the investigation and field survey of 6 river basins, and planning reports with development plans on 11 individual reservoir areas. With the freezing of recreation construction funds for 1952, 1953, and 1954, detailed construction plans should be prepared so that needed public facilities can be built as soon as construction funds are made available. It is estimated that detailed planning and construction drawings will be necessary on 10 reservoir projects to keep pace with the Bureau of Reclamation's construction program.

The importance of preparing a plan for the conservation, development, and use of the outdoor recreation resources of the Missouri River Basin has been recognized since the inception of the water-resource development program for the basin. Completion of a basinwide recreation resources survey should result in more accurate information concerning the recreation needs of the basin, as well as the nature and location of important recreation resources, and should indicate the kinds and location of public recreation facilities and programs most needed. Such information is essential to the formulation of a coordinated and comprehensive plan of resource conservation and development in the basin; without it, important recreation resources and potentialities will be lost, impaired or destroyed and the public will invest money in the development of recreation facilities in a hit-or-miss fashion, with mediocre results.

The small staff of 4 employees set up in fiscal year 1951 and at which it has since _____, has been able to lay the groundwork for the overall study including organization, met_____, collection and analysis of data on existing recreation areas and facilities, and 2 _____ studies on specific phases of the overall survey. Recognizing the importance of this basin ____ recreation survey and of State participation in it, the Missouri River Basin Interagency Committee in 1952 organized a recreation subcommittee to work with the National Park Service in conducting the study.

In a large and complex development program, such as the current one in the Missouri Basin, sound recognized planning principles fully support the need to accelerate the recreation basinwide survey and place it as soon as possible in a parallel position with studies for the development of other resources involved.

Archeological and historical surveys and excavations, $165,000

Pursuant to the Historic Sites Act of August 21, 1935 (49 Stat. 666) responsibility is placed upon the National Park Service for conducting a program for recovering irreplaceable historical and archeological resources from nationwide water-control projects of the Bureau of Reclamation and the Corps of Engineers, prior to flooding or other destruction. The Congress itself attempted to safeguard the irreplaceable archeological records on public lands by the enactment of the Antiquities Act of 1906 (16 U. S. C., secs. 432, 433) which prohibited the exploitation of such materials. The construction now of nationwide water control projects under Federal auspices has made it urgent that the Federal Government salvage representative portions of this irreplaceable scientific data.

An urgent and important phase of water-control projects is the investigation, appraisal, and recording of archeological and historic sites, structures, and objects in reservoirs and the salvage of these scientific records. Prehistoric man selected his home sites along the rivers which gave ease of transportation and more fertile soil for raising crops. It is estimated that 80 percent of the scientific data pertaining to prehistoric man in the Missouri Basin are in the river valleys. Without this basic information we cannot understand man's utilization of the resources of the Missouri Basin in the past. The magnitude and urgency of the task is evident from the fact that imminent completion of only 3 dams—Fort Randall, Oahe, and Garrison, will result in the total disappearance of the Missouri River as we now know it for a distance of 400 to 600 miles. In addition to archeological studies on the main stem of the Missouri, archeological surveys are needed in the Canyon Ferry, Fort Clark Unit, Heart Butte, Angostura, Trenton, Tiber, and Kirwin Reservoir areas where construction of canals and laterals may damage archeological sites.

Likewise surveys of historic sites are needed to record the invaluable landmarks of the white man's advance across the American continent. The white man, like his predecessor, used the river for exploration and settlement, consequently, the Lewis and Clark sites, fur trading posts, military forts, and early settlements are along rivers and in many cases will be inundated by dam construction.

On the basis of surveys already made, a limited number (not in excess of 10 percent) of the archeological sites are selected for excavation and salvage of irreplaceable archeological materials. Important historic sites, such as Fort Recovery, Fort Berthold, Kipp trading post and the lower Brule agency will be excavated to obtain additional historical data.

The Smithsonian Institution, under a cooperative agreement with the National Park Service, does much of the field work. State scientific institutions have recognized the need for the urgency of carrying forward this work promptly and have supplied funds, equipment, and personnel. During the 1952 and 1953 fiscal years, research contracts were made with the North Dakota and Nebraska State Historical Societies, Nebraska State Museum, the Universities of Nebraska, Kansas, South Dakota, Montana, Wyoming, and Missouri. The scientific importance and public interest of the work is widely recognized in the Missouri Valley. In view of the magnitude of the task, both Federal and State assistance is needed to carry forward the program in advance of flooding dates. Since the inception of this program in 1947 the contributions of 11 cooperating State institutions are estimated to total $45,000. In spite of this record of Federal and State cooperation only a little more than half the necessary salvage work has been accomplished each year and an ever-increasing backlog of unique scientific material is being threatened with total destruction. The 1954 estimate is in the same amount as the $165,000 available for 1953 and will provide for excavations and investigations of only the most urgent minimum resquirements in the reservoir areas of Fort Randall, S. Dak.; Oahe, S. Dak.-N. Dak.; Garrison, N. Dak.; Tiber, Mont.; Glen Elder, Kans.; Tuttle Creek, Kans; and Jamestown, N. Dak.

Bureau of Indian Affairs

Summarized financial data

Total obligations to June 30, 1952		$1,860,280
Allotment, fiscal year 1953	$325,000	
Prior year balance available	55,316	
Total obligations, fiscal year 1953		380,316
Allotment, fiscal year 1954	300,000	
Total obligations, fiscal year 1954		300,000

JUSTIFICATION

Within the Missouri River Basin are located 26 Indian reservations, established by the United States for the benefit of certain of the aboriginal Indian tribes and their members. These reservations comprise blocks of land which vary in size from 50,000 to 2,500,000 acres, and embrace a total of about 15 million acres. About 65,000 Indian people reside upon these reservations or in their vicinity. Only a few generations removed from their aboriginal state, many

of these people are still far from complete integration into the general cultural, social, and economic patterns in their localities. All of their real property, and much of their personal property, is held in trust for them by the United States Government. They are largely dependent on the Federal Government for medical attention, as well as for education and the other services ordinarily provided by local, State, and county governments. Their economic and social situation generally is substandard. Because of these things the Indian people, in general, find themselves as separate, and almost isolated, islands of social groups within the surrounding population of non-Indians.

Twenty of these 26 Indian reservations are affected in some degree by one or more units of the Missouri Basin development program. This program provides for irrigation of 303,000 acres of new land, and supplemental water for 64,000 acres of land already under construction works. About 350,000 acres of Indian land, the home of nearly 750 Indian families, will be taken for reservoir sites. No matter how limited or how extensive the direct effects of these takings are, they will affect all members of the tribe because of the tribal properties involved and because of tribal organizations and customs peculiar to Indian people. Since all Indians are affected, the repercussions of large land takings for reservoir and the benefits of irrigation developments extend beyond the taking area to the whole reservation.

In principle, the Missouri River Basin development program seeks to provide the greatest benefits to the greatest number of people. While many individuals benefit in this process, others suffer damages. Just and equitable assessment of charges to those who benefit, and of equitable compensation to those who sustain losses, are particularly complicated in the case of Indians because they involve fractionated inheritances of trust lands and tribal properties. Bound together by common kinship and property ties, and living in isolated groups, the Indians do not react as other individual members of the total community when confronted by the prospect of change in the existing pattern. In general, they have not sought the benefits and attendant responsibilities of the basin program. Located along the main stem rivers, they will be adversely affected by some of the large developments. They look upon damages accruing to them and their property as a result of the execution of the program as an invasion of their rights and violation of promises heretofore made to them by the United States. They bow reluctantly and sometimes resignedly to the greater influence of the non-Indian community, guardedly hoping for just treatment.

It is in the climate created both by the present attitude and condition of Indians and the vista of opportunity afforded by Missouri Basin projects that the Indian Bureau must now operate in the Missouri River Basin. Although its activities are many and varied, they may be classified under two basic functions: (*a*) Custodianship and management of Indian property, and (*b*) provisions of services and guidance directed toward the integration of Indians into the general economic and social fabric of the Nation. The advent of the Missouri River Basin program has not changed or enlarged the scope of these responsibilities, but it has broadened and added substantially to the job to be done.

With respect to the Missouri Basin project as it impinges upon Indian interests, the Bureau of Indian Affairs has responsibilities in four major areas: (1) the determination of damages to Indians arising from the taking of Indian lands for reservoir and other rights-of-way, and assisting in negotiations for settlement of damages claims; (2) the appraisal of benefits likely to accrue to Indians from various units of the Missouri River Basin development program; (3) the rehabilitation of Indian families adversely affected by the development program; and (4) the effective and efficient use of all Indian resources affected by the development program.

Points (3) and (4) are so intricately associated with the whole social and economic matrix of the reservation as to preclude adequate treatment without taking into account the total resources and population of the reservation involved. Determination of the nature and extent of the physical and human resources of the reservations affected by the program, the preparation of plans for effective utilization of these resources, and the establishment of programs for testing these plans and for putting them into effect will absorb a large portion of the budget for fiscal year 1954.

The rehabilitation of families displaced by reservoir projects requires more than investigation and planning. Funds budgeted for undertakings contingent to Corps of Engineers programs will be used to facilitate the removal of families from the taking areas back to the Oahe and Fort Randall Dams; to help take care of the work required to transfer title and to make payment for the land

takings, to purchase lands needed to reestablish Indian farmers and ranchers on the land; and to assist Indians to stabilize their economic, social, and cultural life.

Funds budgted for undertakings contingent to Bureau of Reclamation projects will be used to assist area offices in checking Indian ownership, descriptions, and in doing the paperwork involved in obtaining rights-of-way on Indian lands for dams, reservoirs, canals, power lines, and other purposes.

In addition to the above purposes, the requested funds will be used to assist in negotiations incidental to Indian participation in the program and for performance of work required in carrying out special duties relating to the Basin project which have been or will be placed upon the Indian Bureau by congressional action. To continue its participation in the Missouri River Basin development program, the Indian Bureau proposes work on the program units listed. These operations are timed to provide necessary facilitation of the programs of the Corps of Engineers and Bureau of Reclamation where they touch upon matters of Indian concern.

Mr. LINEWEAVER. Mr. Chairman, may I, in closing our presentation, express our appreciation for your patience and that of your colleagues on the committee. We have felt that this hearing has been very good from our standpoint, and the questions that have been asked by the committee members have elicited information that we think should clarify a great many points that have been obscurbed heretofore. On behalf of Governor Aandahl—I talked to him last night and told him how we were progressing—and he asked me to convey to the committee his own, and I do that, as well as my own and on behalf of my colleagues here, our appreciation of the 3 or 4 days of patience that you have shown. We thank you.

Mr. JENSEN. Thank you, Mr. Lineweaver and the other gentlemen that have appeared with you. This committee always tried to get the information—the best information we can obtain—on which to base the actions of the commitee, and we thank you for your willingness to give us such information.

We can only hope and trust that when the bill is finally passed, that it will be in such form and in such amounts that the people will feel that we have done the very best within our power to do. That is the purpose of this committee, and we are always anxious to work with members of the administrative branch of government to accomplish that purpose.

Thank you very much, gentlemen.

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